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TRIBES AND TEMPLES

A RECORD OF THE EXPEDITION TO
MIDDLE AMERICA CONDUCTED
BY
THE TULANE UNIVERSITY
OF LOUISIANA
IN 1925.

VOL. I.

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1926

An edition of fifty numbered copies of
this book has been printed on
special paper.

This book is dedicated

to

ALFRED P. MAUDSLAY

who was the first to explore the Maya ruins in a modern scientific way, and who in the section on archaeology of the Biologia Centrali Americana gave the world a monumental collection of material for future research.

EXPEDITIONARY STAFF

FRANS BLOM, *Archaeologist, in Charge*
OLIVER LA FARGE, *Ethnologist, Assistant*

———— o ————

LAZARO HERNANDEZ GUILLERMO, *Guide*

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PREFACE

In March, 1924, an anonymous friend of Tulane University created an endowment, the income from which would be used for the study of the Middle American countries. It was then decided to conduct an archaeological and ethnological investigation through library research and expeditions to be sent into the fields formerly inhabited by the most notable of the ancient population of America, the Maya Indians.

Mr. Frans Blom was selected to take charge of the first expedition, assisted by Mr. Oliver La Farge. They started from New Orleans on the 19th of February, 1925. The object of the expedition was to study ancient remains, as well as the customs and languages of the Indians. At the same time notes were taken on various other subjects.

The work was so distributed that Mr. Blom made studies of everything pertaining to archaeology and he also collected geographic data. Mr. La Farge gathered material relating to the customs and languages of the present-day Indians.

In the following pages will be found the report of this, the First Tulane University Expedition to Middle America. It is based on the journals kept day by day throughout the expedition. The sections on archaeology have been written by Mr. Blom and those parts relating to the present-day Indians, by Mr. La Farge. An attempt has been made to present the material in such a form that the general reader, unacquainted with the history of the ancient inhabitants of Central America, will find it interesting, and at the same time to uphold a standard satisfactory to the scientist. For this reason paragraphs describing the mythology, calendar, and customs of the pre-Columbian Maya have been woven into the text, forming a background to the discoveries made by the expedition.

The style used by the writers is distinct, as is also the material they present, but as many things of interest would be lost in splitting it into separate publications, it was decided to make this report in the form of a book of travel.

For the convenience of those searching for special information, a detailed index will be found at the end of the second volume.

EXPLANATIONS AND ABBREVIATIONS

Stela —A monolith, either plain or carved.
Plaza —A square enclosed by mounds or temples.
Finca —A large ranch.
Cabildo—A Municipal House.

Tams. —State of Tamaulipas, Mexico.
Ver. —State of Veracruz, Mexico.
Tab. —State of Tabasco, Mexico.
Chis. —State of Chiapas, Mexico.

---

1 km.—Kilometer, equals 3,280 feet 10 inches.
1 m. —Meter, equals 3.28 feet.
1 cm.—Centimeter, equals .3937 inches.

All maps and plans are made to the true north, using a magnetic declination of 7° east.

Where nothing else is indicated on the plans, north is always towards the top of the page.

Chapter I

PREPARATIONS AND EQUIPMENT

For centuries man has been interested in the deeds of his ancestors. Innumerable discoveries of prehistoric objects have served to rouse his interest and imagination and have made him draw hasty conclusions, and weave fascinating fabrics of fact interwoven with many threads of fancy. Giants, dwarfs, dragons, knights and fair maidens, inhabited planets and lost continents, were the designs in these richly-textured compositions.

Today archaeologists tell stories which resemble these gaudy fabrics, the newspapers give much space to discoveries in all parts of the world, the public reads and is thrilled. Rarely, though, is it known what goes before a discovery. The reader pictures the explorer stumbling on a ruined city, without realizing that training and careful research precede every expedition into the unknown. He does not see the scientist working late hours over old maps and documents. He does not see him selecting his equipment with the greatest care. He does not see the toilsome days when the expedition fights dense forests, bad trails, and millions of insects—not for a few days, but week after week, month after month.

Assyria, Babylonia, Egypt, Greece, and Rome have their historians. You learn about them in school. We can reconstruct the daily life of the Egypt of three thousand years ago to the minutest details. One has heard something about the North American Indians, but few are those who know that 1,500 to 2,000 years ago a civilization, the Maya, that can well be compared with those of the Old World, and on certain points even surpassed them, flourished on the American continent.

The Spanish Conquerors and their priests wrote about the people they met on their hunt for gold and souls. The first modern explorer to visit this territory was an American, John L. Stephens. After him came French, German, and British. The leadership in this field of research again passed to America when the Peabody Museum of Harvard University began its work, followed by the Carnegie Institution of Washington, and now quite lately Tulane University of Louisiana. Each expedition has brought home material that adds to our knowledge of the civilizations of Ancient America.

The general history of Egypt, Greece, and Rome has been written. The history of the foremost civilization of ancient America has

not yet been written, but the day will soon come when the story of an American race as artistic, as scientific, and as human as most of the races of the Old World will be opened to those who are fascinated by bygone days.

We will follow the Tulane expedition from its start to its end, and glean from its records a little of the history of the ancient Maya, the Maya country, the daily life of the Maya descendants, and the methods used in modern archaeological research.

The less equipment one intends to take on a long expedition, the more difficult it is to get it together. This sounds paradoxical, but none the less it is true. When one has a long journey ahead, and knows that it will cover difficult trails, every piece of equipment has to be selected with the greatest care. Far away from towns it is impossible to get many things needed on an expedition which has archaeology and ethnography for its main purpose; everything must therefore be carefully considered beforehand.

The 1925 Tulane Expedition to Middle America was carefully planned months ahead. A multitude of maps was consulted and compiled into a main expedition map. There are maps of most of the Middle American countries, and the greater number of them look well, but are remarkably inaccurate in their details. None the less, it is of value to compile all available data before starting.

Books on the region were consulted, and extracts made so that we would have a handbook of condensed information to be used when far from libraries.

After the route had been carefully considered, the next step was the selection of the equipment. We knew that, for the greater part of our journey, we should have to depend on horse or mule transportation, and that we should have to cross tropical forests where there is an abundance of trees, but no grass on which to feed the animals. We also knew that there would be steep mountains to cross. Furthermore, as the expedition was planned to be a reconnaissance trip more than an excavation expedition, light equipment would be necessary. Light fibre boxes specially made for transportation on pack animals were secured. They are called "kayaks," and measure 58 cm. long x 23 cm. broad x 49 cm. high. They will hold about 100 pounds each, two boxes being a convenient cargo for one animal, and one box the usual weight carried by an Indian.

Though there were only two white men on the expedition, an aluminum cooking set for four persons was bought. It is always best to have a cooking outfit for two or three more than the party

numbers, to take care of guides, and visitors. Knives and forks go with the set, but extra knives for skinning game, etc., have to be provided.

No camp cots were taken, but hammocks with specially made mosquito nets. These nets have a sleeve at either end through which the ropes of the hammock run. Indian huts are built of poles and the forest is full of trees, so there is always a place to hang the hammock. We found sheets both cool and comfortable when our bodies were itching with tick bites, and they can be used as bandages in an emergency. A rubber wash basin also proved very convenient.

A folding table was carried for use not so much as a dining table, as for a place on which to complete our field notes and water colour sketches. It is comparatively rare to find tables in Indian houses. For chairs we used our kayaks.

No complete tent was taken along, only a fly-sheet, this proving sufficient for general use in covering ourselves and the cargo. There are usually elephant-ear leaves, or small palm leaves in the forest, so that in a short time one can build a shelter sufficient for a couple of days, even if it should rain quite hard. As it happened, the expedition was fortunate enough not to encounter a full day's rain as long as it was on the road. The trip was so planned that we would be well up in the mountains before the rains started in the lowlands along the Gulf Coast. Furthermore, this year proved very favourable in that the rains were late in the highlands.

No member of such an expedition should ever be without a compass, a snake-bite pencil, and an army emergency ration. All three things are carried for obvious reasons. The compass serves to find one's bearings. The snake-bite pencil, which looks like a small fountain pen, contains in one end a small lancet with which to enlarge the wound inflicted by the snake, in the other, permanganate crystals, which, when smeared into the incision made with the lancet, have proven a potent antidote against snake bites. The army emergency ration contains three cakes mainly composed of chocolate, each representing a meal.

For geographic reconnaissance work a Brunton pocket transit was used. This is a remarkable instrument, light and compact. It serves both as compass and clinometer. Mounted on a small camera tripod it gives quite accurate readings, and the person trained to use it can make very good traverses. As it contains a mirror, it can even be used when shaving.

It is a well known fact that the ancient inhabitants of the region which we proposed to explore oriented the greater part of their buildings to the cardinal points. They knew the true north, but not

the magnetic north. Our compasses were, therefore, corrected to true north, using a declination of 7° E. This declination is an average of declinations ascertained by surveyors of several oil companies who have been, and in some instances still are, working in the region.

A French barometer compensated for temperature was used for taking altitudes over sea level.

We carried three watches, which were checked with each other, and used in combination with the barometer when observing altitudes.

All measurements were done in the metric system. For the convenience of those not conversant with this system, a table giving the equivalent in feet is found in Appendix X.

In measuring buildings a 25-meter steel tape was employed, and larger distances were paced. All plans of ruins were drawn to scale on the spot. Long descriptions of arrangements and dimensions of buildings are tiresome, and do not give a picture of their plan to the reader. Those who wish to study the drawings in more detail can easily ascertain the dimensions with the help of a graduated ruler.

Pedometers are not reliable, so when pacing, every fifth step was punched on a tally.

The smaller impedimenta used in this section of the work included drawing boards, rulers, protractors, water colours, and coloured crayons.

Next came the choice of photographic equipment, which should not be too bulky. For rough work a No. 1-A Autographic Kodak, Jr., with roll film and anastigmat F 7.7 130 mm. lens was used, to this we also had a portrait attachment. This small camera gave very good results, though roll film is always difficult in moist tropical countries, as it is apt to stick to the covering paper when rolled tight.

For more special work, such as photographing monuments and buildings, we used a Graphix camera with a Kodak anastigmat lens, F .4.5, 1½ inches, size 3¼ x 5½ (post card size). Very good results were produced with this machine. The speed of the camera was of no account; all the exposures save two were made on time, with the use of a tripod. It was of great value to be able to focus the camera exactly with the help of the ground glass, and this camera is not so heavy and bulky as a Graflex. Pack film was used exclusively with this machine. The individual films in the pack lie loose between sheets of black paper, so that the tropical moisture is not so apt to damage them as with roll film.

It is a great help to carry an instrument, put out by the Kodak people, with which you can tilt your camera to any desired angle. This is specially helpful when photographing monuments which are lying flat on the ground and are difficult to raise.

Though we were able to secure a very good collection of photographs with the two mentioned instruments, we have come to the conclusion that small cameras with exceptionally good lenses really are more serviceable than large ones. It is just as easy to make an enlargement from a small, sharp negative as from a larger negative. A small camera is much easier to handle both when on foot and on horseback.

Before leaving for the field we were given a medical examination, and this same was repeated upon our return. The first investigation was to ascertain that we were in fit condition for a long, strenuous journey, and the second to find out if we had succeeded in collecting some interesting germs in our blood which might be of importance to medical students.

A small medical kit from Burroughs, Wellcome & Co., served us very well. The products of this company are wonderfully compact and of high grade. We carried a large stock of quinine, which was chiefly used to help the Indians.

For work in the ruins we had folding shovels, trench picks, a 1½ ton jack for lifting and turning fallen monuments, stiff brushes to scrub moss and lichens off the monuments, and some sheets of tin for use as reflectors when photographing monuments and hieroglyphics. These sheets of tin were cut so that they would fit inside the kayaks.

When selecting saddles and pack saddles it is advisable to get the kind commonly used in the country to be visited. The North American horse is larger and broader than his Central American brother, and the McClellan and Texas saddles are generally too broad for the Central American animals and are apt to damage their backs. We, therefore, bought saddles of the usual Mexican type. Muleteers are accustomed to particular types of pack saddles, and much annoyance and delay is avoided when the traveler buys the kind of pack saddle his servants are acquainted with.

Our personal equipment was very small, consisting chiefly of riding breeches, flannel and linen shirts, heavy boots, and broad brimmed Stetson hats. For protection against rain we had native ponchos made of cloth covered with native rubber. These are very practical, as they cover the entire saddle and saddle bags.

Only a small supply of canned goods was carried for emergency purposes. For the greater part of the journey we lived off the

country, buying our supplies of sugar, salt, coffee, beans, and rice in the villages we passed through. No firearms were carried on the first half of the trip, but in Palenque we purchased a small Winchester .22-calibre rifle which proved to be sufficiently powerful to kill such food game as curasaw, wild turkey, and monkey.

A stock of glass beads, bandanna handkerchiefs, and a collection of chromo prints of saints were carried for bartering with the Indians, or as gifts to the more important members of the tribes with which we came in contact.

Leafax notebooks were used for our field notes, and all notes were made with a carbon copy. Original and copy were kept in separate places and whenever we had a safe opportunity of sending out mail, the carbons were shipped home, so that if we should have the bad luck to lose our equipment, our field notes at least would be safe.

Chapter II

THE START

New Orleans was cheering the first Mardi Gras parade of the year 1925 when the steamer Copan on the 19th of February went down the river carrying the writer and the greater part of the First Tulane Expedition's equipment on board. By dawn on Sunday morning we steamed into the mouth of the Tamesi River followed by eight huge oil tankers, (fig. 1) lying high on the water, as they were empty. We were all heading for the oil city, Tampico. Tankers steadily come and go there. They come to be filled with crude oil, lubricating oil, and gasoline, and leave for all ports of the world.

Fig. 1—Tampico. Oil Tankers Entering Tamesi River.

Tampico is the heart of the oil region running along the Mexican Gulf towards Vera Cruz. The river bank is crowded with refineries. Everything is oil—large islands of it float on the river, even the air is saturated with its stench.

We anchored in the mouth of the river to undergo a superficial medical inspection, after which we proceeded to the city. A town grown up around oil camps is never attractive, and though millions and millions of dollars have gone into Tampico's municipal treasury,

the town is still without paved streets and very dirty. Only where the foreign oil companies have built their quarters does one see well kept houses and gardens.

On a large field close to the Gorgas Hospital are several ancient Indian mounds through some of which new roads have been cut, and all of them have been dug into by treasure hunters (fig. 2). Only a few pot sherds were found, and these did not give any indication as to the authors of the mounds. The cross sections made in the mounds by the road builders show successive layers of cement floors about a foot apart. The mortar in the floors has been made from burnt oyster shells, and chiefly consists of a conglomerate of oyster shells with a thin smooth surface. As many as sixteen layers of mortar were counted in one mound.

Fig. 2—Tampico. Mounds by the Gorgas Hospital.

A visit was made to the famous old pot hunter, Professor William Niven. He has changed his residence from Mexico City to Tampico and here continues his eager search for antiquities. In his rooms he had a collection of small clay figurines, all females and of quite primitive character (fig. 3). Several of them had black paint on their head-dresses. Mr. Niven reported them to have been found near a station called Paso Vera Cruz on the railroad.

It was carnival time in Tampico, and during the afternoon crowds were circulating through the streets in decorated cars, and the pavements were littered with paper streamers and confetti. On the main plaza sat the Public Scribes, unaffected by the gayness around them, typewriting love letters for illiterate Mexican swains (fig. 4).

Some cargo was unloaded and then we proceeded to Vera Cruz, where the S. S. Copan was to load bananas. Again we went through a cursory medical and customs inspection. Once outside the customs station, one is attacked by a swarm of carriers, all crying at the top of their voices and offering to carry your luggage to the hotel. Woe to the poor traveler who does not drive a careful bargain in advance! He invariably will be overcharged, and when he makes a row about it, the carrier will call in a policeman, who will force the traveler to pay up, and then the two of them, carrier and policeman, will go out in the street and split the dividend.

FIG. 3—Tampico. Clay Figurine. (½ Size).

In Vera Cruz also it was carnival time. Sunshine and flowers, bright colors and gay crowds—everybody seemed to enjoy the peace that now prevails in the country. Indians were dancing in the streets, and decorated cars and floats moved slowly up and down. A shot was heard. A man disengaged himself from the crowd and limped over the Plaza towards a Red Cross station. Blood was dripping in his trail. He

FIG. 4—Tampico. Public Scribes on the Principal Square.

was shot through the foot. Nobody seemed to take any notice, and the carnival went on.

In Mexico City it was necessary to acquire government permits for the work of the expedition, and various letters of introduction.

Every department of the government with which we came in touch offered the University whole-hearted co-operation, and furnished the Expedition with letters to the State Governments, as well as to the Military and Civil authorities.

Oliver La Farge joined me in Mexico City, and together we visited various ruins in and round the capital.

Guided by Mrs. Zelia Nuttall, a trip was made to the ruins of Huexotla, where some very interesting ancient walls and foundations for buildings are found (fig 5). This is a large group of ruins. The top of one mound has been excavated. No walls of buildings are on this mound, but a series of platforms, and Mrs. Nuttall suggested that it might have been used as a market place. The side of the mound has been washed out and shows several successive layers of floors with stone rubble and dirt between (fig. 6). On one of the largest mounds stands a beautiful old Spanish church, and in front of this is the fragment of an idol. The whole group of ruins lies along a deep baranca and along the edge of this a retention wall was built in ancient times. Now the baranca is crossed by a very picturesque old Spanish stone bridge* (fig. 7).

Fig. 5—Huexotla, D. F. End View of Ancient Wall.

On the same trip we visited a mound near the large town of Texcoco. This mound is built entirely of adobe brick covered with plaster (fig. 8).

Mrs. Nuttall is widely known as an expert on the ancient history of Mexico, and her beautiful old Spanish home in Coyoacan is a meeting place for all prominent people visiting Mexico. Many are those who think of the garden of Casa Alvarado as one of the outstanding places of beauty in the Valley of Mexico, and many are

*L. Batres. 1904.

Fig 6—Huexotla, D. F. Section of Mound Showing Various Floor Levels.

those who have enjoyed Mrs. Nuttall's charming hospitality. The garden is rich with beautiful flowers, and here and there among the flowers stand Aztec stone idols. One of the paths in the garden is lined on both sides with such idols and has wittily been christened, "Avenida de los Hombres Illustres," The Avenue of the Famous Men (fig. 9).

Much time was spent in the National Museum studying the magnificent collections of Mexican antiquities. Unfortunately, this collection is very badly catalogued and the origin of many of the specimens is totally unknown. For example, a Maya stela carved in the style of the Usumacinta Valley stands in the patio of the Museum, and nobody knows from which ancient city it came (fig. 10).

A fragment of another stela carries a much weathered in-

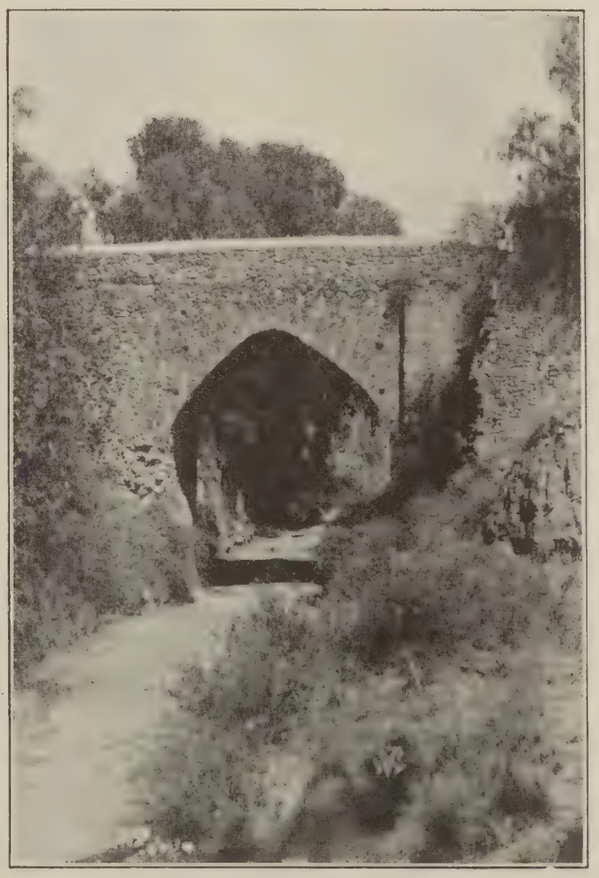
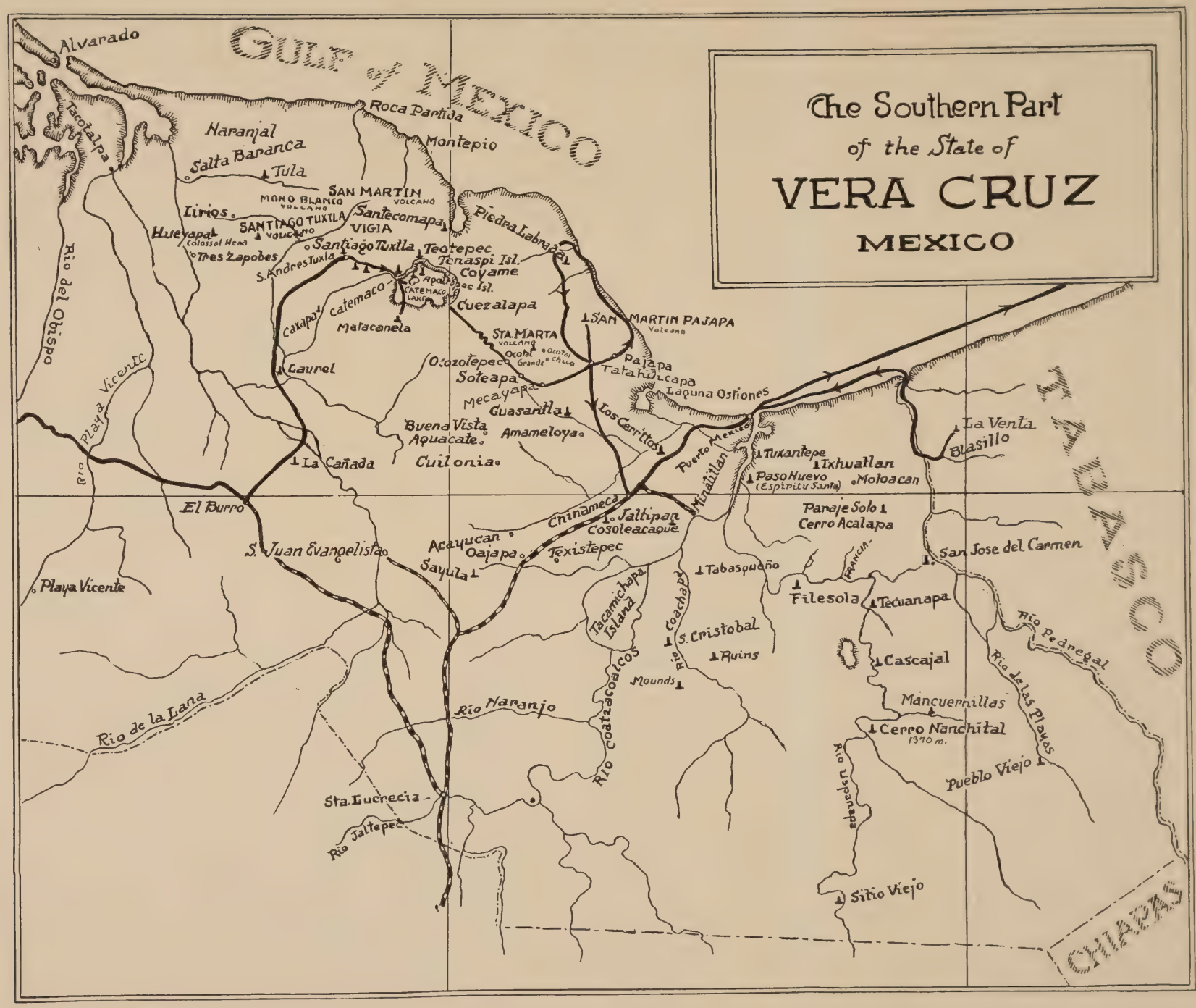


Fig. 7—Huexotla, D. F. Old Spanish Bridge.

FIG. 8—Texcoco, D. F. Section of Mound Built of Adobe Brick.

FIG. 9—Coyoacan, D. F. The Avenue of Famous Men in the Garden of Casa Alvarado.


The Southern Part
of the State of
VERA CRUZ
MEXICO
GULF of MEXICO
TABASCO
CHIAPAS
Alvarado
Tacotalpa
Roca Partida
Montepio
Naranjal
Salta Baranca
Tula
SAN MARTIN
VOLCANO
MONO BLANCO
VOLCANO
Lirios
SANTIAGO TUXTLA
VOLCANO
Santecomapa
VIGIA
Piedra Labrada
Hueyapa
Colossal Head
Tres Zapobes
Santiago Tuxtla
Teotepec
Tenaspi Isl.
Coyame
S. Andres Tuxla
Agalispec Isl.
CATEMACO LAKE
Cuezalapa
Catemaco
Cakapa
Matacanela
SAN MARTIN PAJAPA
Volcano
STA. MARTA
VOLCANO
Ocotal
Ocotal Grande
Ocotal Chico
Pajapa
Tatahuicapa
Laguna Ostiones
Laurel
Ocozotepec
Soteapa
Mecayapa
Guasantla
Los Cerritos
Buena Vista
Aquacate
Amameloya
Cuilonia
La Cañada
Rio del Obispo
Rio Playa Vicente
El Burro
S. Juan Evangelista
Playa Vicente
Chinameca
Jaltipan
Cosoleacaque
Acayucan
Oajapa
Texistepec
Sayula
Minatitlan
Puerto Mexico
Tuxantepe
Ixhuatlan
Paso Nuevo
(Espiritu Santa)
Moloacan
Paraje Solo
Cerro Acalapa
La Venta
Blasillo
San Jose del Carmen
Tabasqueño
Filesola
Tecuanapa
Tacamichapa Island
Rio Coachapa
S. Cristobal
Ruins
Mounds
Rio Coatzacoalcos
Cascajal
Mancuernillas
Cerro Nanchital
1370 m.
Rio Pedregal
Rio de las Playas
Pueblo Viejo
Rio Uspanapa
Sitio Viejo
Rio Naranjo
Rio de la Lana
Sta. Lucrecia
Rio Jaltepec

scription of which only a few glyphs could be drawn, but which, nevertheless, seem to record the date 9-17-15-0-0 5 Ahau 3 Muan.*

In the Hall of Monoliths are two monuments which undoubtedly come from the ruins of Toniná in the State of Chiapas, which will be discussed when describing those ruins.

After all our letters of introduction were in order and our equipment completed, the real expedition was ready to start. By train we returned to Vera Cruz, and there our civilized clothes were packed and shipped home to New Orleans. On the 12th of March we donned our riding clothes and high boots and boarded the small train running southward towards the Isthmus of Tehuantepec. The train bounced along on a miserable track, at first following the Gulf Coast. Out in the blue waters of the Gulf we got glimpses of the Isla de Sacrificios, where the Spanish Conquerors found abandoned temples with newly sacrificed victims lying on the altars, when they anchored off the coast in 1518.

FIG. 10—Mexico, D. F. Maya Limestone Stela in the Yard of the National Museum.

At the station of Madereros, 55 kilometers from Vera Cruz, are several large mounds, and here also starts the road for the Cocuite Oil Camp, where many clay figurines have been found.

It is rumored that the Oil Company drilling there mistook artificial mounds for mud volcanoes, the latter said to be good oil indications in this region. The pottery from Cocuite is chiefly of To-

*Glyph A-1 is erased, but is undoubtedly the Katun glyph. B-1 shows 0 Tun. A-2 and B-2 are 0 Uinal and 0 Kin respectively. The numeral to A-3 is not distinct; the glyph must be Ahau. B-3 may be a supplementary series glyph, and A-4 appears to be 3 Muan. In case this last reading is correct, this should give the above recorded date (fig. 11).—Morley, 1923, Page 263.

tonac character. Some pieces are painted with Chapopote, as the Indians call asphalt (fig. 12). Mr. Ibarola, Mexican Government Inspector of Oil, has in his possession a very fine Totonac figurine found here. It is one of the few specimens where one of the well-known "laughing faces" of Totonac origin is seen on a complete figure (fig. 13). The figurine has a band around its breast and a small apron on which are designs* (fig. 14).

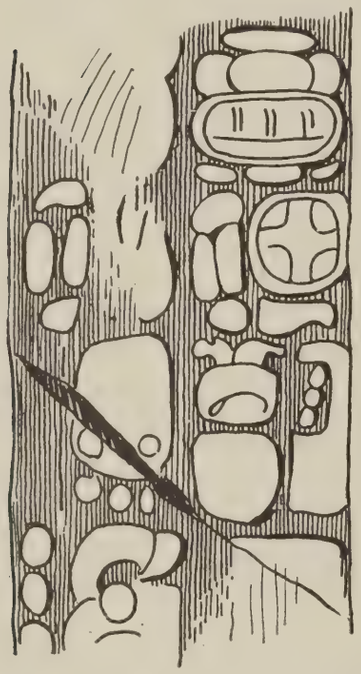


Fig. 11—Mexico, D. F. Inscription from Maya Stela in the yard of the National Museum. (1:10).

It was a long and dreary journey, with the train r a t t l i n g and jumping on a wretched track and us wondering how long it was going to keep on going. The country is covered with dense bush, now and then changing into extensive savannas. In the v i c i n i t y of Tierra Blanca the Oaxaca Mountains come in sight. Whereafter the train runs parallel to them, crossing innumerable rivers. In several places we passed single mounds, or whole groups of mounds. The land is low and humid, and covered with dense tropical second growth, here and there broken by banana plantations. To pass the time we reviewed our knowledge of the route lying ahead of us.

The country we were traveling through was one of the first to be settled by the Spanish Conquerors. These rich alluvial plains had good crops, and Cortez granted himself lands here. In the rivers around Tuxtepec in the mountains, which we could see to our right, the Indians washed gold, and paid it as tribute to the rulers of Mexico, who in turn were forced to deliver it to the Spaniards.

We were headed for the volcanic mountains around San Andrés Tuxtla. Sometime around the year 1900 a small nephrite statuette was found in the Canton of the Tuxtlas. This object eventually drifted into the National Museum at Washington, D. C., and there it was discovered that the figure was covered with hieroglyphs—Maya hieroglyphs at that—which opened with the date 8-6-2-4-17 8 Kaban 0 Kankin in Maya figures, later correlated with our calendar to be the year 98 B. C. The so-

Fig. 12—Cocuite, Ver. Spindle Whorl Painted with Asphalt. (Full Size).

*Professor Byron Cummings of the University of Arizona has recently made excavations at "El Cocuite," and states that he found burials in the sides of mud volcanoes.

called Tuxtla Statuette carried nothing less than the oldest date recorded in writing from the whole of the American Continents.*

Since the finding of this statuette only a few scientific expeditions have entered the area. The German archaeologist, Dr. Eduard Seler, has worked at Matacanela, and the Geologist, Dr. Imanuel Friedlaender, has studied the volcanoes of the district. There was a good reason for not going into the country. Constant revolutions had made that wild mountain region a hiding place for all kinds of bandits, rebels, and political refugees. These people had imposed brutally on the Indian tribes, who considered the forests their property and, therefore, turned hostile to all strangers.

Fig. 13—Cocuite, Ver. Totonac Clay Idol of the Laughing Face Type. (24 cm. high).

The great Maya cultural centers lay east of the Isthmus of Tehuantepec. An outlying branch of Indians speaking a dialect of the Maya language is still found in the Huasteca, south of Tampico. Little is known about the link between these two, and it has long been desirable to investigate the region between the Maya proper and the Huasteca. The lack of information on the area between these two groups of the same language, and the existence of the Tuxtla Statuette was enough to warrant an expedition to the Tuxtla Mountains. To add to this, a photograph of a monolith had recently been received at Tulane University — a stone monument carved with figures that looked somewhat like Maya glyphs. This photograph was sent by a Mexican engineer, Sr. Rafael de la Cerda, of Mexico City, who had made some explorations in the region in question in search of petroleum. At a place called Piedra Labrada he had seen some other stone monuments.

Now we sat in the train speculating on what we would find in these fascinating mountains. Would we find Indians speaking a

*Throughout this report the correlation between Maya and Christian Chronology established by Dr. H. J. Spinden in his book, "Reduction of Mayan Dates," 1924, will be used.

Maya dialect? Would we find that the figures on the monuments were Maya? Were there any hopes of discovering a date still older than the one on the Tuxtla Statuette — and what about the rebels and the hostile Indians? To be frank, they occupied our minds much less than the prospects of some archaeological discovery.

The train stopped for a while. Something had gone wrong with the engine. After about an hour's waiting we started off again, and finally limped into the station of El Burro, where we had to stop over for the night. The train, though, was scheduled to go on to Santa Lucrezia, but as the engine was out of order, it did not resume its tedious progress until about 2 o'clock in the morning. We were glad that we could get a room and beds, and that we did not have to spend the night in the mosquito-infested cars.

Fig. 14—Cocuite, Ver. Design on Idol. Fig. 13.

The small wooden shack hotel, run by a Chinaman, was not bad, and quite clean. At table we were seated with Mexican cowboys, a German and a Chinese trader, a few passengers and all the crew from the train. From now on we would certainly be in very picturesque company.

The following morning we boarded a small branch line train. A remodeled box car serving as first class compartment, we christened the "Cattle Pullman." The jolting was not as bad as the day before, but we moved more slowly. Right and left on the track we saw mounds and at "Kilometer 17" beside the station La Cañada, there was quite a large group of mounds arranged around a court. Again at El Laurel we saw a mound of average size, and here it is undoubtedly that Mr. Seler had seen one of his stone idols.

As we crossed the Cuautotolapán River the Tuxtla mountains became visible ahead of us. The nearer we got to the mountains, the more hilly became the country, and the more the track wound in and out among the hills. Progress was very slow, and La Farge amused himself picking flowers from the car windows.

About noon we finally reached our destination, San Andrés Tuxtla. At the bottom of a picturesque kettle-shaped valley formed by high volcanoes, lies a group of white houses with red tiled roofs and large clusters of bouainvillea hanging over the garden walls.

The town is the proud owner of one Ford and a truck, has its own electric light plant, and a telegraph line. It has its old church, a nice Plaza, a market place, and all the rest of the paraphernalia belonging to a good-sized Mexican town — including an army of about a hundred men, and a General.

Fig. 15—San Andres Tuxtla, Ver. Stone Idol Representing Frog.

As a circus was expected in town the good citizens at once decided that we were part of the show, and all the village youngsters crowded around us as we worked our way to the only "Hotel," a combination boarding house and cigar factory.

Shortly after our arrival we went in search of antiquities. Willing village youngsters led us up to the church and showed us a stone figure representing a frog crudely carved in volcanic rock* (fig. 15).

We soon found that we were the great sensation of the town. Men and children crowded around us and it required a struggle to get room enough to take photographs. The crowd was, however, not without its uses — everybody showed himself eager to tell us about idols and caves. Soon we were the center of a procession walking towards the cemetery. Here we were shown three stone heads representing rabbits (fig. 16). The name of the Canton is Tuxtla, a Spanish corruption for the Aztec Toxtli, which means rabbit, and undoubtedly these rabbit heads represent some kind of coat of arms (fig. 17). Friedlaender states that these rabbit heads, as well as the frog, all of Olivine Lava, have been brought from the ruins reported on the southern side of the Santiago volcano.†

Fig. 16—San Andres Tuxtla, Ver. Three Rabbit Heads of Stone. (40 cm. high).

It is always a good plan to pay official visits to the town authorities and the chief of the garrison, so this was done, and we were assured of all

*C. Seler, 1922. Page 544, Plate 5, 2.
†Friedlaender, 1923. Page 155.

support. Then we visited an old German school teacher, Don Federico Sandrock, a pleasant old gentleman who knew much about the surrounding country. He showed us some huge fossil bones found by an Indian at Xanasca near the town. His Mexican wife told us of imprints of the feet of a man, a child, and a dog on a lava block near San Juan los Reyes. These imprints, may well be of recent origin as the last eruption of the San Martín volcano began with underground thundering on March 2, 1793, and a serious eruption occurred on May 22nd. Previous eruptions had occurred in 1664 and fumaroles were reported as late as 1829.*

Fig. 17—The Aztec Hieroglyph for Tuxtla.

All the volcanoes in the Tuxtla region are now extinct, and covered with vegetation.

Close to San Andrés is a small crater lake called Laguna Encantada — the Enchanted Lagoon — and the popular belief is that the waters of this lagoon rise during the dry season and fall during the wet season.

The Santiago Volcano is considered sacred by the Indians and, as already mentioned, ruins are reported on the southern side. We heard of groups of mounds at Tatocapan and Tula. Mr. and Mrs. Seler saw a colossal stone head between Los Lirios and Tres Zapotes.†

At Montepio, on the Gulf Coast, some mounds are reported, and it is also said that here is a cave formerly used by the famous pirate, Lorenzillo.

The distance between San Andrés Tuxtla and Catemaco is about 15 kilometers over a fairly bad motor road. We loaded all our equipment on a truck and with a Mexican driver set out for Catemaco, the last point that could be reached with mechanical transportation. About midway we passed through the tobacco plantations of Siguápan and Natacápan, both belonging to a German company. At the first place were some small mounds, and at the latter, a group of very large mounds, some of which have been dug into by the owners of the plantation. The road was quite rough, and after many ups and downs we reached the rim of a hill range and came in sight of the Catemaco Lake. All around the lake tower volcanic mountains and odd-shaped volcanic hills are thrown, thrust, and flung into the landscape. Down below us lay the picturesque grass-roofed village on the shores of the lake and beyond the lake

*Moziño, 1913—Robelo, Jardin de Raises, Aztequismos, Page 386—Friedlaender, 1923.
†Seler, C., 1925, Plate V-1—Melgar, 1871, Page 104—Lehmann, 1922, Plate 38.

were high, forest-clad mountains (fig. 18). We began to realize that we had heavy work ahead of us. We were to cross those mountains and find hidden archaeological cities in the forest beyond.

Before noon we reached the town and found quarters in a Mexican house of the usual wood and adobe type, with chairs standing stiffly against the walls of the main room, and the walls decorated with polychrome almanacs and beer posters. Shortly we were served with a huge meal of fish from the lake and the everlasting Mexican "pollo," a flattering name for an old hen. Then we went to see Mr. Jacob Hagmaier, the German manager of several of the tobacco plantations along the lake shore. He at once placed himself at our disposal and, thanks to his kindness and help, we succeeded in getting some excellent men for our trip through the mountains. He

FIG. 18—Catemaco, Ver. View of Catemaco Village, the Lake and the Sacred Island Agaltepec.

took us into his warehouses, where long rows of Indian girls were sitting on straw mats and sorting tobacco leaves into first, second, and third grades. These grades are exported to Germany. The fourth grade is very poor and is used for the domestic cigarettes. It was very interesting to see the fermenting of the tobacco, which reached as much as 65 centigrades (200° F.), and the pressing of the finished leaf in bales.

The guide provided by Mr. Hagmaier took us to see a mound in the outskirts of the town, also some stone idols, one lying outside a house close to this mound (fig. 19). The idol probably represents a human figure with the head knocked off. Its lower half was roughly chipped and served as a plug. Inside the same house was a small stone head with a tenon at its back, this has grotesque fea-

FIG. 19—Catemaco, Ver. Fragment of Stone Idol.

tures with broad upturned lips, and ears perforated for ear ornaments. It undoubtedly should be ascribed to the Totonac culture (fig. 20).

Close by, in front of another house, we saw an egg-shaped boulder with a face carved on it, very well done, and giving an impression of slight Maya influence (fig. 21). This idol is reported to come from the Tenaspi Island in the northern end of the lake.

FIG. 20—Catemaco, Ver. Grotesque Stone Head. (18 cm. high).

The patron saint of Catemaco is the Señora del Carmen and the Indians come from far away to worship on the day of this saint.

Towards evening we went to a point north of the village and there found a small group of mounds in an enclosure. From there was also a very good view of the Agaltepec Island (fig. 22). It appeared to us that the position of this island was so central in relation to the country surrounding the lake that some important

FIG. 21—Catemaco, Ver. Egg-shaped Idol from Tenaspi Island. (60 cm. high).

mounds ought to be found on it, but all our inquiries in the village produced only negative answers.

Sunday morning we got a small gasoline launch and crossed the lake to Finca Victoria. It was gray and windy and the waves were

quite choppy. At La Victoria on the east shore of the lake Mr. Hagmaier had arranged for horses, and soon we were in the saddle on our way to Matacanela. The trail wound steeply up a mountain side, and the lake lay like a beautiful panorama below us. Then we crossed a small range and rode in high forests. Gradually climbing, after about half an hour's ride, we reached the small finca Matacanela, where Seler is reported to have made excavations, though we have not been able to locate a description of these.

Mrs. Seler mentions some stone figures, and we found these in front of the main house.* They had been brought there by some captain in the rebel army and set up very nicely, where they remainded until a few years later when some government troops arrived and scattered them. We found several stone boxes, also a few pieces of sculpture. Among the latter was another rabbit, or at least the fore-part of a rabbit, with the legs and part of the body complete (fig. 23). The stone boxes were decorated on all four sides, one with some excellently carved bivalve shells (Pecten) and another with a row of circles (fig. 24).

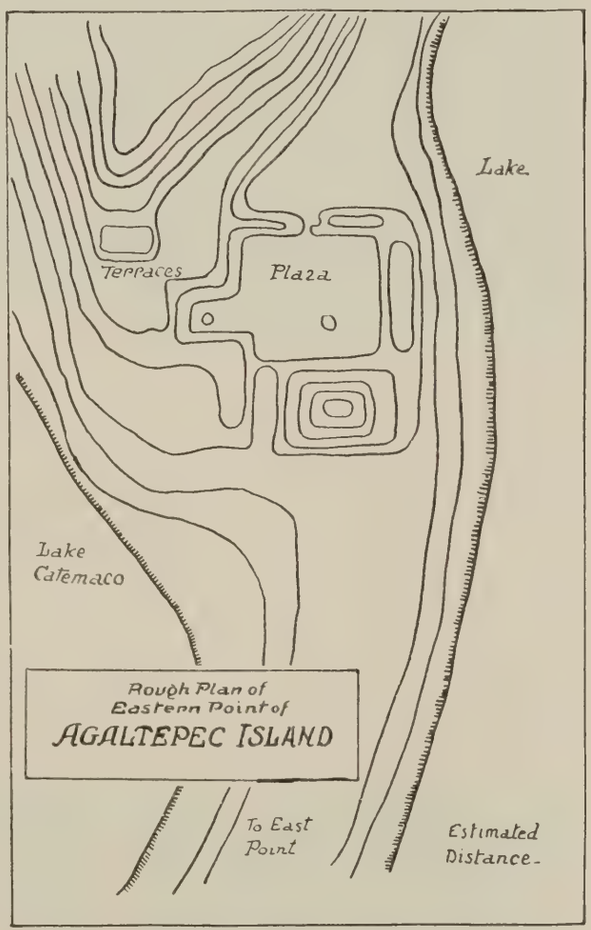


FIG. 22—Agaltepec Island. Rough Plan of the Eastern Part of the Island.

Some mounds lay close to the house, and a sculptured stone is reported to have tumbled down into a small stream close by. We tried to locate it, but without success. A crude stone serpent's head lay close to a small palm hut (fig. 25) and with the stone boxes stood a circular stone altar on a base (fig. 26). All these objects have been carved out of volcanic rock, and they show unusual skill in the stone mason's art. They look very Aztec, especially the stone box with circles, but nevertheless I believe them to be connected more closely with the Totonac culture. The Aztec intrusion into this region must have been of a late date.

*Seler, C., 1922. Plate V, 4.

The different German caretakers on the plantations we visited were all very helpful, and one must admire the tenacity with which they fight the exuberant vegetation and the restless social conditions which have prevailed through so many years. At the time of our visit Mexico was calm, and it is earnestly to be hoped that peace may last, as it is a country of unlimited commercial and natural possibilities.

Fig. 23—Matacanela, Ver. Rabbit's Head Carved in Stone.

By one o'clock we had returned to Catemaco, and after a meal we again set out in the launch, this time to investigate if our suspicions that there were monuments on Agaltepec Island were correct. Mr. Häbele, the owner of the small launch, was most enthusiastic about the vessel. He had built the small craft himself, and was very proud of its ability to stand a threatening storm. Huge black rainclouds were gathering along the eastern side of the lake, blown in from the sea through a gap in the mountains. Due to this gap the eastern side of the lake has a rainfall almost double of that on the western side.

For a short time the small craft chopped and jumped in the waves, until we got in under the island. This island is crescent shaped, and it did not take us long to judge from its profile that it had

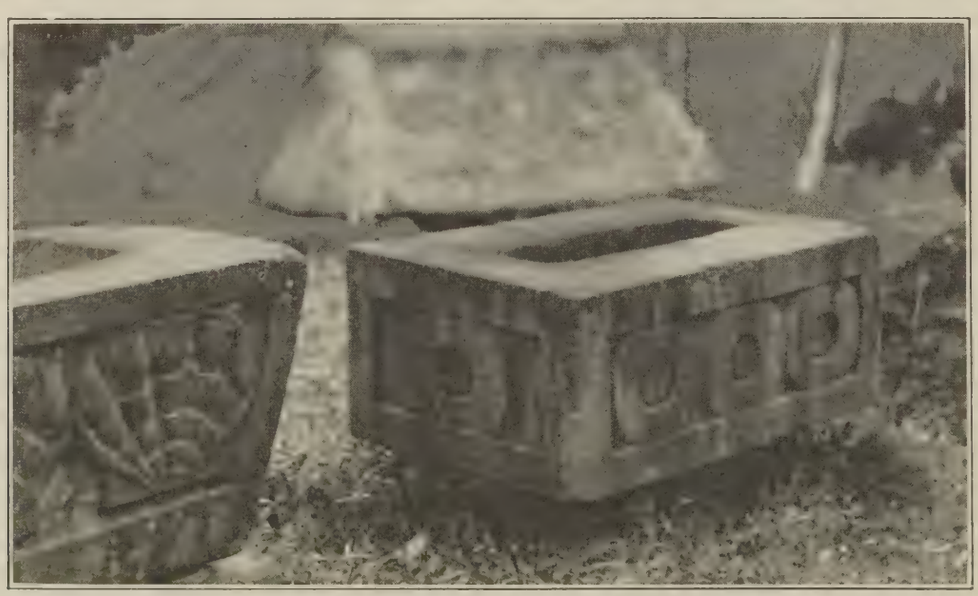


Fig. 24—Matacanela, Ver. Two Stone Boxes.

been remodeled by man. We landed at its eastern point, and soon stood on the first mound. A rapid survey showed us that every square foot of the island had been under the hand of man. On the low east and west points were mounds around courts; the high central part had been terraced, and on its top were a series of mounds. In vain we searched for monuments. But in several places we found walls built of a coarse-grained stone, easy to carve into square blocks, and used to this day by the inhabitants for their houses.

Fig. 25—Matacanela, Ver. Serpent's Head of Stone.

The court on the eastern point was the most interesting. A truncated pyramid lay to the east, and from this a raised road led to the northeastern-most point of the island, apparently a ceremonial road. To the west of the pyramid was a court in which we found one stone which may have served as a monument.

The island lies in a position where it can be seen from every mountain pass leading into the Catemaco Basin, and it is also visible from nearly every place on the lake shore. A more excellent and dominating location could hardly be found on which to build a place of worship.

In between these visits to ruins we had arranged for horses and pack animals for our trip over the mountains, and Mr. Hagmaier's help again proved valuable. He placed us in communication with a Mexican, Don Juan Brisueño, caretaker of the Cuezalapa cattle ranch. He was a tall, slow-spoken man who had gone through the

Fig. 26—Matacanela, Ver. Circular Altar.

shifting phases of many revolutions, remaining friends with federals, rebels, and Indians — just the man we needed to help us get through.

On March 16th we were at last in the saddle. Don Juan took the lead as we rode out of Catemaco (fig. 27), and we followed with saddle horses for ourselves and our chief guide, cook, and interpreter, Enrique Hernandez, several pack horses, and two Mexicans on foot. The First Tulane Expedition had reached the beginning of the trail.

We rode along the northern shore of the lake, and time after time Don Juan stopped his horse to tell us about the country. Large volcanic cones lay on our left, and we also passed two crater lakes, then we came in sight of Tenaspi Island, from which one of the

Fig. 27—Catemaco, Ver. Volcanic Cone at the End of Village Street.

idols in Catemaco is reported to come. Don Juan told us that much pottery was to be found there. Not far from Teotepec we saw a small mound with rough stone walls, and shortly afterwards Don Juan made us dismount and took us to a well of mineral water. It seems that there are several wells of this kind along the northern shore. The water bubbles slightly, and has a very pleasant mineral taste.

Then we traversed the root of a small peninsula, and again our guide had something to tell. A small enclosure of sticks marked the place where a fleeing rebel had been shot in the back by the mountain Indians.

When we reached the lake shore we found another mineral well, called Coyame, a short distance from the shore. A stone wall has been built around it and several dugouts lay alongside it, and some Indians were there filling their bottles with the water. All the inhabitants around the lake send for their drinking water to this place.

Here the trail runs along the foot of a vertical cliff, the cliff on one side and the lake on the other, a favorite place for ambushes during many revolutions.

At Tebanca we passed through the remains of a coffee plantation. There are now no signs of coffee bushes, and the houses lie in the most picturesque ruin. This plantation was situated somewhat above the lake on its eastern shore. Don Juan informed us that the peak of the snow-clad Orizaba volcano could be seen from here on a clear day.

Finally, about 2 o'clock, we reached Cuezalapa, our destination. Here ended our first day's ride and we certainly were a little stiff, but a drink of bush-cognac, concocted of very little water, some sugar and lemon, and a large amount of sugar cane rum, soon brought us to life again.

The houses of the finca were in a sad state of decay caused by time and the shifting tides of revolution. During the evening Don Juan told us of the extraordinary life he has been living at this place. The ranch was a favorite haunt for bandits and rebels. Some nights they would come and stay until dawn, and a few hours later federal troops would arrive. Sometimes fleeing men would hide here — one rebel general stayed here for months curing his wounds, alone in a little hut, hidden away in the forest. The federal troops passed by, and all the time Don Juan had to be friends with everybody. "And when they stopped coming because of peace in the country, it was quite strange and lonesome," he told us.

We were sitting by a fire outside the house when an Indian boy turned up with a bow and some iron pointed arrows. We had long before heard that the Indians we were going to visit used bows and arrows, but not until now, on the verge of entering their country, had we seen any of them. The sight was highly suggestive. The mountains lay as a black silhouette against the night sky, and we sat wondering what lay in store for us.

Chapter III

AMONG THE INDIANS OF THE TUXTLA MOUNTAINS

At Cuezalapa an Indian was added to our outfit. He was armed with an old muzzle loader, and looked quite dangerous. We ourselves did not carry any firearms whatsoever, as we deemed this a safe course.

Don Juan gave our guide, Enrique, his final instructions, telling him how to make friends with some of the worst Indians, and what to do about getting food for us. Then we mounted and followed by our host, we rode towards the forest. At the end of a long

Fig. 28—Ocozotepec, Ver. Principal Street with the Santa Marta Mountains in the background.

mountain spur which gradually ascended towards the heights, Don Juan bade us farewell, and we started our climb. Following the spur, we soon came onto a narrow ridge, and this we followed to the top. On either side of us stood dense semi-tropical forest. Here and there trees had fallen, leaving an opening in the thick vegetation, through which we could look down over the mountainside. We made slow progress as the trail was wet and slippery, and steep as well. In several places we got off our horses in order to lighten their burden. Our boys were driving the pack animals with loud cries, and now and then we had to stop to readjust cargo.

Our guide pointed out the tracks of a tapir which had crossed the trail, and shortly afterwards we met the first family of monkeys,

some of the amusing and inquisitive small, white-bellied spider monkeys. The top of the pass is called the Cerro Bastonal and is part of a chain of volcanic cones which extends from the volcano Santa Marta towards the southeast and forms the western side of the Coatzacoalcos basin. We reached the top (1,050 meters) about noon and made a short stop to rest the animals and ourselves. About two hours later we came out of the tropical forest into low second-growth and open country with a corn field here and there, and finally about 3 o'clock we reached the village of Ocozotepec, two rows of grass-roofed huts on either side of a red earth ridge, the bare ridge forming the main street (fig. 28).

Here we had our first contact with the Indians. It took some time to locate the chief who carries the proud title of Municipal President. This gentleman was not very enthusiastic about our

Fig. 29—San Martin Mountain and Oak Forest.

arrival, but finally quartered us in the "Municipal Office," a grass thatched hut with mud walls recently built and not quite so miserable as the other houses of the village. Next to the office was the jail and here we stored our saddles. In front of us we had the church, also a grass thatched house with mud walls, the largest building in the village. These three buildings were lying on the highest part of the ridge. Looking north we saw the vivid red soil of the village street bordered by squalid huts. Beyond were forests, and far away loomed up the San Martín Pajapan volcano which we had planned to ascend (fig. 29).

The male part of the village of Ocozotepec crowded around us next morning to watch our preparations for leaving, and after much touching of hands—one does not shake hands here, but barely lets the hands touch—we finally got away. The trail ran through hilly country covered with open oak forest and here and there a pine. The ground is carpeted with grass and the soil, where it shows, has a deep red color (fig. 30).

An hour and a half brought us to Soteápan, a more bleak and miserable place than Ocozotepec. Rebels and bandits have in turn had their fling at the village with fire brands, so only little was left of the houses. The women were sitting in the huts and the men were loafing around the office.

Fig. 30—Mecayapan, Ver. The Tulane Expedition on the Trail.

A friend of the University had advised us that the Indians of Soteápan were supposed to be blonds, having faded blond hair about the color of drying corn silk and dirty blue eyes, and that they all should be at least six feet high. We found the Indians to be of exactly the same stature and type as those of Ocozotepec, and furthermore, that they likewise speak the Popoluca language. The village cannot now contain more than about 20 families, but is undoubtedly the same as the one called Xocotapa by Villa-Señor y Sanchez, and at the time of his writing it contained 358 families of Indians.*

*Villa-Señor y Sanchez. 1746. Vol. I., Page 367.

From Soteápan the trail wound more towards the northeast, and soon we reached the large and prosperous looking town, Mecayápan, a change from the last two villages. All the houses were well built and in the middle of the village lay an immense grass roofed church with adobe walls. Two bronze church bells hung outside the church under a separate little roof (fig. 31). Women were busily engaged around the houses; one was spinning, turning the whorl in a basket; others were weaving. They were dressed only in gay colored skirts and prettily woven belts of cotton.

We stopped to salute the chief who was loafing outside the "office" and had a chat with him. Here the Indians all speak the Nahua tongue and they are of much better physical appearance than our Popoluca friends.

Fig. 31—Mecayápan, Ver. Church and Steeple.

Again we took the trail, which led up and down stony hills and over cool mountain streams, the path winding through an oak forest looking like a beautiful park. The Guasantla river was forded and shortly before reaching our destination we crossed the Tesisapa and there found a fine hammock bridge newly made of vines slung across the river (fig. 32). Then we rode in among the small huts of Tatahuicapa and up in front of the large brick church which the Indians had built for themselves (fig. 33).

Rumors of our coming had preceded us, and soon the village chief and his council of elders turned up. They took us to an old store behind the church, and we at once started to unpack.

The first things to come out of our boxes were some red handkerchiefs and other trinkets we had brought as presents. Then after

some talking and explaining we invited the most prominent men of the town to take a little drink with us, thus establishing friendly relations. We told them of our wish to find old carved stone monuments, and a host of young fellows at once volunteered to show us one which they said was sitting on the top of the San Martín Pajapan volcano. This we had heard of before. We also asked for guides to go to Piedra Labrada on the north side of San Martín. We questioned them, and the answers came slowly, but apparently they were friendly.

The village has a guard, armed with some old, rusty rifles. They patrol during the night in order to be on the lookout for stray intruders. This guard also made an appearance and, as it is well to

Fig. 32—Tatahuicapa, Ver. Hammock Bridge Made of Vines.

be in standing with the higher powers, they also were invited to have a drink. Then the captain of this formidable army in a somewhat dispassionate way told us that he, about ten days before our arrival, had killed some Mexicans who had arrived heavily armed to seek shelter. These were rebels against the government and were fleeing. They, however, had made themselves obnoxious and the villagers had simply killed them. That was a fine hint.

We unpacked our folding table. This table, by the way, turned out to be one of our main drawing cards. In every Indian village or hut where we set it up, it caused great joy and admiration. Then by the light of a storm lantern we sat down to write our field notes.

Along the wall stood and squatted the village authorities, smoking and spitting, and with a small hope for another little drink slumbering in their hearts. They conversed in their own Indian (Nahua) language, and now and then questioned us as to what we were doing. One man turned up with a dozen tortillas, another with some eggs, as presents to the strangers. Now and then the guard would appear in the doorway and join in the chatting.

Presently they started to tell us of their hardships, how one party of bandits after another had come plundering, burning, and raping, and how finally when they could stand it no longer, they took matters into their own hands. It seems that they had sought support from the Mexican authorities, but in governmental affairs

Fig. 33—Tatahuicapa, Ver. View of the Village with the San Martin Pajapa Volcano in the background.

they are subject to the rule of the neighboring town of Pajápan, whose good people graft all they can from Tatahuicapa, so a strong enmity between the two towns, which may break out in fighting at any time, has resulted.

Tatahuicapa must have at least a thousand inhabitants, and is a clean and peaceful place. The roofs of the houses are made of bunches of grass, tied closely together on rafters; the walls are of mud mixed with grass; and the doors are of boards. Windows seem to be unknown, and all doors are on the southern side of the house. This is the warm side, and is protected against the blast of the cold northern winds (fig. 34).

We made up our minds to leave some of our equipment here while we rode out along the coast to Piedra Labrada, where the monument which was the chief object of this part of the expedition was supposed to be located. Then having examined that place, we planned to return to Tatahuicapa, and from there to ascend the San Martín Pajápan.

One by one the spectators disappeared into the dark, to go home and tell the women about the sensational arrival of the friendly strangers. The guard passed once more, and we gave them some cigars with which to pass away the night. Closing the door we went to sleep in our hammocks. It was somewhat of a triumph for us to be sleeping peacefully among these Indians considered by all out-

Fig. 34—Tatahuicapa, Ver. Indian Huts under Mango Tree.

siders to be so warlike and unfriendly, but really a peaceful community when left alone, and a kind people when treated the right way.

The men here all wear straw hats, shirts, and long trousers of cotton, with sandals on their feet. They tend to the cornfields and do the hunting. Most of their time is spent in front of the office discussing their all-important local politics.

The women dress in gaudy coloured striped skirts held up by finely woven white belts. Shoulders and breasts are naked, and as they are well built they certainly gave a pleasant impression, especially the young women when they passed by our hut on their way to the river, walking straight and willowy with a large earthen jar

or basket of corn on their heads (fig. 35). Many wear flowers or leaves as a crown in their hair. The small girl children are carried astride the hip of their mothers, and as soon as they can walk they trail along after them, always with flowers in their hair, shiny glass bead chains around their necks, and dressed in small skirts—an exact miniature of their mothers (fig. 36). The young boys run around stark naked.

The town was preparing for a "fiesta," a great celebration in honor of its patron saint. These "fiestas" rarely take place without much noise and shooting of rockets imported from the Mexican towns along the Tehuantepec railroad. We were, therefore, not astonished when awakened about two o'clock in the morning by some shots, rockets going off to tell the world that Tatahuicápa would be celebrating before long.

Fig. 35—Tatahuicapa, Ver. Indian woman going to the river for water.

Reducing our packs to two cargoes, we set out the next morning towards the Gulf coast.

Where the territory of Tatahuicápa and of Pajápan meets, the Indians have erected a cross, and this is constantly kept decorated with flowers.

First we reached Pajápan, a place more sophisticated than Tatahuicápa, with several houses built in Spanish style, and a huge old Spanish Colonial church. As we passed through we, as usual, presented our respects to the chief, an old white-haired Indian, who looked perfectly unreliable. He glanced at our government papers and called for his secretary, saying that he could not see very well. That is the excuse always used when the good chief cannot read and write.

Pajápan lies on the eastern slopes of the San Martín Pajápan volcano, and from the village Plaza is a fine view both of the mountain towards the west and over the Laguna de Ostiones (the Oyster Lagoon) in the lowlands of the Coatzacoálcos valley to the east.

It was still early when we continued towards the coast. First we passed through a high forest and then rode out among low bush and grass clad hills. We had to cross several small streams, and, as was to be expected, one of the horses could not miss the chance of getting bogged. We pulled and pushed and at last had to unload him. But he did not seem to want to stir until our men, and we too, for that matter, opened up on him with a shower of profanity. That helped.

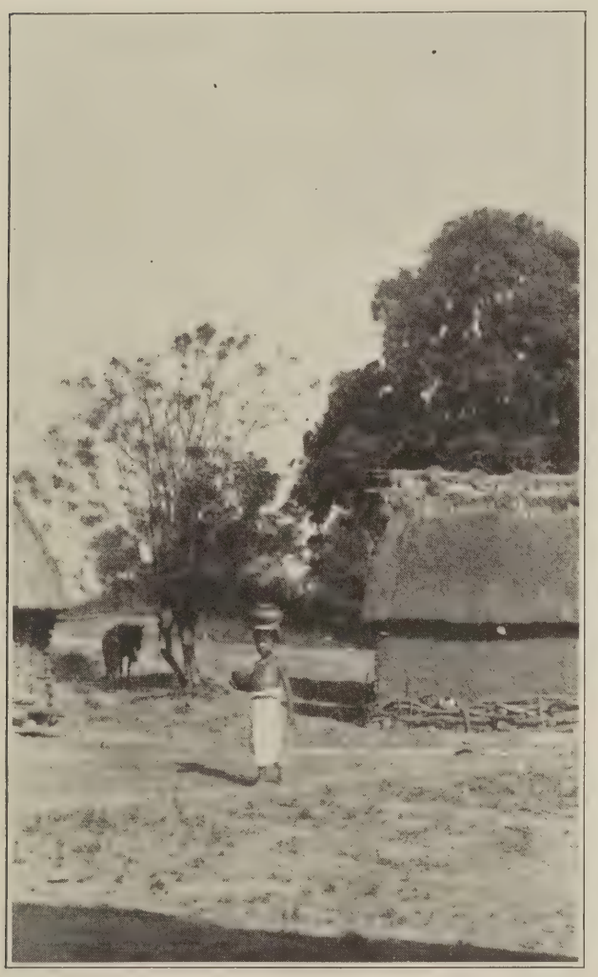


Fig. 36—Tatahuicapa, Ver. Indian child carrying clay pot on her head.

Soon we could hear the waves breaking against the shore; a distant murmur that grew to thunder when we rode over a sand dune, and saw the Gulf lying before us.

Following the sandy beach towards the west we came to a wall of lava projecting far out into the sea, and at its end lay an isolated rock looking like a sentry of lava thrown there by his majesty, the volcano. A crack leading up to the back of the lava stream was found, and we then rode along on an open grass plain for some time, winding in and out in order to avoid large cracks in the cliff. Then we scrambled down again to the sandy beach, and followed it. The sun was now high, and the glittering white of the sea and sand pained our eyes. Another lava stream had to be crossed but thereafter, the beach lay before us unbroken as far as we could see. To our right lay the blue Gulf showing white teeth of foam-tipped rollers, and to our left, a belt of forest out of which rose the volcanoes, San Martín and Santa Marta. It was a place of rare beauty.

While we rode along, it entered our minds that four centuries ago a small band of Spaniards, some of the "Conquistadores," had followed this same strip of coast going towards the east in search of a port where the great Captain, Cortes, could land his ships; and

with them were some of the men of the Emperor Montezuma with a map of native paper "on which were painted and marked very true to nature, all the rivers and bays on the northern coast from Panuco to Tabasco, that is, for a matter of one hundred and forty leagues, and the river Coatzacoálcos was marked on it."*

Few are those who since then have followed this coast. We were told that here and there pirates had taken shelter, and we heard stories of political refugees who had taken this route. But otherwise, it had apparently been deserted by everybody for centuries.

Some small rivers had to be forded, but only one of these was so deep that we found it necessary to place our feet on our saddle in order to keep dry. We were on the lookout for a trail which should turn inland to the settlement of Piedra Labrada, and did not find it until late in the afternoon. This trail was very narrow and its entrance well concealed. Into an opening in the bushes we drove our horses, and then struck a low and muddy path. All the time we had to be on the lookout for branches, and as our horses stuck to the edges of the trail in order to avoid the mud, we had to be on the alert not to get our knees smashed against the trees.

Our guide insisted that we were now nearing the settlement, but we rode on for an hour and a half without seeing a sign of human beings. Then he gave up, and another guide, whom we had christened "the Pope," his name being Bonifacio, set us on another trail which by five o'clock brought us to all that was left of the settlement of Piedra Labrada—a few charred house posts over-grown with plants. Nine hours in the saddle, and then to reach an abandoned and burnt settlement!

But that was not all our trouble. Huge black clouds were gathering around the mountain tops; a storm was near. Hastily we rigged up our tent fly on three charred posts, hung up our hammocks, and set to prepare a well-earned lunch. When we climbed into our hammocks for rest and sleep, it had begun to rain slightly.

The rain gathered force during the night, the tent fly sagged, and pools of water formed on it and started to drip on us. We managed to keep fairly dry, though La Farge had a fight to stop a small river from running down his hammock ropes. The "boys" huddled together under our hammocks and really had the dryest place in camp.

Shortly after dawn, two of the "boys" set out in search of some rumored inhabitants and the third tried hard to make a fire with some wet wood. He finally gave this up and turned to a job which pleased him infinitely more—he sat quite still for an hour looking

*Diaz, Bernal, Maudslay Edition.

at the rain water dripping from the edge of the tent into a bucket. This he enjoyed because if the bucket would fill he need not go down to the river for water. The bucket finally *did* fill. The rain started in real tropical fashion, coming down in streams. Everything was now wet, and our breakfast was perforce limited to some cold rice left over from the previous evening and a few slices of sausage.

About half past nine our scouts returned bringing not only a local Indian guide, but also dry weather, so at once we packed up our belongings and started off for some Indian huts reported to be nearby.

Before leaving our camp a photograph was made of a small stone idol which some of the former inhabitants had found in the bush and brought to this place. This idol has a human face, but is so crudely done and has so little character to it, that it is hard to place it in any particular culture.

We had not gone very far before we reached some very well-kept corn fields with a trail leading through them, flanked by rows of pineapples. Here and there were clusters of bananas and in another place was a patch of sweet potatoes and calabash. It was apparent that the owner was a hard-working man.

José Albino, an old Indian who spoke Popoluca, was the proud possessor of these corn fields, a score of pigs, eight sons, two daughters, one son-in-law, and a kind, hard-working old Indian wife. He lodged us in a small corn barn with a good, solid palm-leaf roof to shelter us against the rain, and after a while we went over to his house to enjoy a good meal he had prepared for us.

Some small low huts were clustered together in the centre of the cornfield. In front of them was a palm roof under which the women were preparing the food (see fig. 49), and behind them was a pig sty where the prides of the family were kept.

Fig. 37—Piedra Labrada, Ver. Ancient Metate.

The old lady of the house served us with eggs, coffee, and hot tortillas. The corn for the latter we had seen her grind on an old metate, or Indian grinding stone, which had been found in the forest near the ruins we were in search of. This grinding stone was quite elaborate with the high leg at its upper end carved as shown in the accompanying drawing (fig. 37).

The Indians insist that these grinding stones found in the ground are far superior to those manufactured today, as they are of a better grain, and the corn, therefore, can be ground much finer on them.

The preparation of the corn for grinding and subsequent baking into tortillas is done in the following way. First the corn is boiled in water containing lime, whereby it swells up. Then this swollen corn is taken to the river where the lime is washed out by sieving the corn in a basket. Well cleaned in this way it is laid on the grinding stone. The person grinding stands at the higher end of the stone, and grinds by pressing and rolling a cylindrical stone pestle over the corn. This operation is repeated many times until the dough has the desired fineness. Then the dough is flattened out in the hand to make thin cakes varying in size according to the custom of the district, and laid over a clay disk resting on the three stones of the fireplace. The tortilla is baked on both sides, and is then ready for eating. These tortillas are the principal food of the Indians. To make them is a slow process and hard work. The Indian women spend, it appears, two thirds of their time in front of the metate preparing tortillas for the household.

After our meal we at once set out for the reported monuments. One of the sons of the house took it upon himself to guide us to them. They were there, to our great relief.

Through the forest and across a small stream, the Xuichapa, we came out in a clearing, and soon discovered that this clearing recently had been used as a pasture for cattle. It was infested with ticks, and before long we were covered with these pests. Walking along we would brush them off the smaller bushes onto our clothes, and these insects, as large as the head of a pin, at once started for every opening in our clothes in order to get at us.

On a slope facing towards the sea were several artificial mounds, and between two of these we at last came across the monument we were in search of. The information we had received from Mr. La Cerda, the Mexican engineer friend, who first drew our attention to this stone, proved correct. It was well carved, and around it lay several other carved stones. The principal monument, *Stela 1,* was a monolith, 2.02 meters long, the lower 18 c.m. of which was shaped into a plug. This plug fitted a nearly circular hole in a square stone tablet lying close to the Stela. Undoubtedly the monument once stood upright, the square stone forming the base. The Stela was an average of 35 c.m. broad, and on its front were a series of carvings. At first sight they looked Maya, but a closer investigation proved them not to be so. The best description of this monu-

FIG. 38—Piedra Labrada, Ver. Stela No. 1.

ment is the attached drawing. To this only shall be added that above what resembles the Maya glyph Pax is a bar with two dots underneath, and over this bar is a conventionalized head of some monster seen fully "en face" and over this a scroll. The monument has plain sides and back and is carved out of hard volcanic rock, as are the other monuments in this place (fig. 38).

To state definitely to what culture this monument belongs is difficult. The carving in the hard rock is so skilfully done that it might be made by the Totonacs but, search as we may, we have not been able to find any similar design with which to compare and classify our discovery.*

Close to this Stela lies the base, a square block 1.04 x 1.23 x 0.55 meters, with an approximately circular cavity in the centre, 45 c.m. across and 35 c.m. deep.

A few paces from these stones is a small stone basin, broken, and a small crouching stone jaguar with its head gone, and at the foot of a mound is a large metate, likewise with an animal head and its legs doubled up under it. (1 meter long and 23 c.m. high). (fig. 39).

On the top of the small mound are charred house posts of a recent dwelling.

It was agony to draw and photograph these monuments, as hoards of ticks were crawling over us. We were glad when the ordeal was over and we could prepare to return to camp. But the guide had another surprise in store for us. He led us into the high forest again, and at the foot of a huge Zapote Mamey tree, he showed us a fragment of a female stone figure. This fragment was 70 c.m. high, and showed head and breasts of a woman. The long hair was indicated by fine parallel

*Recently Dr. W. Lehman, of Berlin, said that the monster head was the hieroglyph for Ieotihuacan, and that the monument was Toltec.

lines down the back. The head was well carved, somewhat broader at bottom than top, and well rounded, giving the impression of a bald-headed person when seen from in front (fig. 40). This piece of sculpture is very interesting. There is something about it that reminds one of the much smaller Tuxtla Statuette, and it also shows similarity to some small green stone idols in various collections, as well as one seen by us in Comitán at a later stage in our journey. Though the hieroglyphs on the Tuxtla Statuette are Maya, the statuette itself was executed by a people of another culture.

FIG. 39—Piedra Labrada, Ver. Small grinding stone in form of animal.

A rough plan was made of the structures, and for a short moment we enjoyed the view from one of the mounds over the forest to the blue waters of the Gulf. Then the itching of millions of tick bites drove us back to camp where we at once stripped and started the slow process of removing the insects with a concoction of tobacco leaves soaked in alcohol. The little wretches disliked this treatment and fell off, but left wounds which could be felt for some time after.

FIG. 40—Piedra Labrada, Ver. Fragment of female idol.

As we woke up the next morning it was raining again, so we got hold of the son-in-law of the house and, as he was a little more intelligent than the rest of the family, we succeeded in getting a short list of words of his language. The settlement here is a Popoluca outpost. The inhabitants migrated to this place in the old man's time from Ocotal Grande.

Our informant was very ill. He could not be more than 23, but looked 35 to 40 years old, and walked with difficulty; his limbs were thin and withered, and he could not eat without becoming nauseated and vomiting.

Our house stood on a small mound, and great quantities of sherds lay scattered about, but not one with incised drawings or paintings on it to give us a clue as to origins. The cornfield itself was very well kept, and so clean that it could be planted three times without re-cleaning. The stalks of the first growth lay bent down to the ground, and the second planting stood high.

By ten o'clock the rain had entirely stopped, so after having presented our hosts with some small trinkets and a beautiful chromo print of a saint, we bade farewell. We were to return not by the beach, but by what was said to be a much shorter way through the forests, passing between the volcanoes of San Martín and Santa Marta.

One of our men went ahead to find a local guide, and after some time he returned advising that the guide would meet us along the trail. We stopped at the given point, and while we were waiting the rain started again with full force. For one-half of an hour we sat patiently in our saddles, and meanwhile our guide was waiting just as peacefully a few hundred meters further up the trail. We found our new guide sitting on a log. He was dressed in a much torn cotton shirt, and the pants of the same material rolled up well above his knees. An old torn straw hat and a home-made cigar completed his costume.

During the morning we forded several rivers, now quite full after the recent rains, and then we started up hill. Possibly this trail was shorter as the crow flies, but the trail along the beach had the advantage of being horizontal for its greatest part. The trail was vertical, up and down the walls of cañons with cool mountain streams at their bottoms.

There have long been rumors of gold in the San Martín mountains, though we were not able to trace them down. In several places there are, on the other hand, large indications of oil in form of asphalt seepages, also there are springs of sulphur water, and deposits of sulphur. Cinnabar is also said to be abundant.*

The occurrence of cinnabar is of interest to the archaeologist, as it was highly treasured by the ancient Maya, and was often used as offerings in burials.

Well into the afternoon we reached the highest point (600 meters) and there found two trails, one leading off to the southeast to Ocotal Grande, and the other more to the north and northeast through Encinal Amarillo to Tatahuicápa. Just before reach-

*Williams, 1852.

ing the first mentioned place, we came across a man and four boys well armed with bows and arrows. They were cleaning a curassow they had just shot.

Encinal Amarillo is a cluster of falling huts, all very poor looking and dirty, and, as far as we could see, only inhabited by old shriveled-up, half naked women and totally naked children.

Just as it was getting dark we came in sight of Tatahuicápa. Crossing the river we scattered a crowd of lightly clad women who were chatting around the public washing and gossiping place—the local newspaper. We rode up to the "Oficina" and were heartily welcomed by our friends, the chief and the armed guard.

Hungry? Indeed we were, after a day's ride without a bit of food, but first we attended to our tired animals. Then our diplomatic agent, Mr. Demijon, showed himself, much to the joy of our Indian friends. Everybody had a drink, and we at last sat down to a hearty meal.

In Latin America, like everywhere else, it is important to know the right people. In some places these are senators, bankers, and other big men; but in Southern Mexico the best people are sometimes men with loose guns and knives, or bad Indian chiefs. If one from the beginning gets hold of the right man, everything is easy. So with our trip—from the start we got hold of one man who was friends with all the leading elements around, and, thanks to his direction, we went through without any trouble.

To climb the San Martín Pajapan volcano was our next objective. Guides were procured in Tatahuicápa, and we left the village on horseback. But after an hour's ride we were forced to tie our horses near a small Indian coffee plantation, and then proceed on foot. The Indians grow a little coffee which they carry over the mountains and trade in Catemaco.

We now left the trail and entered the forest, climbing at an easy grade until we reached a small stream at an altitude of 506 meters. Here, our guide told us, was the last place where we could get a drink of water before we started the real ascent. In this part of the forest every rock and stick was covered with some sort of white larvae the size of one's little finger. There were hundreds of thousands of these, and we wondered what kind of plague they represented.

The underbrush was dense with small palms with thorny trunks, but as we reached higher altitudes they disappeared. The trail was very steep. The path followed a narrow ridge, and we saw very little outcropping rock. The ground was covered with fine, rich,

black soil. As we neared the top the trees grew short and wind-beaten, and their branches were covered with moss. Up to the very top the mountain is covered with forest, which indicates that it must be a very long time since the crater was active. The top has two peaks, and on the highest point of the southernmost of these we found a big stone boulder marked with the number 1211. This number was carved in the rock by a Mexican engineer, Ismael Loya, who made a survey of this area in 1897. The number stands for the altitude of the mountain, 1211 meters.

Loya was the first one to see the idol on the mountain top, and he told the writer in 1922 that he had removed this idol a short distance in order to use it as a corner mark for his survey. In doing so, he broke the arms of the image. Before having broken it, though, he made a drawing of it which is shown in figure 41. Under the figure a small pit was found in which stood some pieces of pottery containing various small objects of jade. Mr. Loya had given all these away but one, which is a small piece of light green jade carved in the form of a rattlesnake.

Fig. 41—San Martin Pajapan, Ver. Drawing of Idol from top of the Volcano made by Ismael Loya in 1897.

The idol is squatting and according to Loya's drawing, holds a bar horizontally with both hands, its body leaning forward. Arms, feet, and the bar have disappeared, and the face is badly mutilated. The total height of the figure is 1.35 meters, of which 57 c.m. is taken up by the head-dress. The head is well carved and has large plugs in the ears. The head-dress is very elaborate. On its front is a face with slanting eyes, a small broad nose, and a downward curved mouth with a broad flaring upper lip. This face resembles a jade head now in the National Museum of Mexico City. Over this is a kind of small hat, the top of which appears to have been broken off. Seen from the side, the head-dress shows a band with some figures that may represent a conventionalized rattlesnake, and over this band are feathers (figs. 42 and 43).

This monument stands on a small level in the saddle between the two highest peaks of the crater rim. It may represent a fire or mountain god. For the time being we would not venture to ascribe it definitely to any culture.

Clouds had gathered around the mountain top and it was raining slightly while we were working with this monument, but when we started our descent the wind tore a momentary rift in the clouds and we got a most magnificent view of the Coatzacoálcos basin, with the town of Pajápan and the Laguna de los Ostiones in the foreground, and a glimpse of the Chiapas mountains far away to the southeast.

Fig. 42—San Martin Pajapan, Ver. Drawing of same Idol as Fig. 41, as it now stands.

Our old guide was searching the landscape for his dear "pueblo." It is remarkable to note how these people are attached to their home towns. It is the first and last to them; the fate of the country as a whole does not concern them.

The descent was not so bad as we had expected, though in some places we were sliding rather than walking downwards. A family of monkeys followed us for a while, jumping from one tree top to another.

Returning to Tatahuicápa we found everybody busily engaged in preparing for a fiesta. Hunters were out to kill deer in the forests, pigs were being slaughtered, and boys came in with bundles of fire wood. The women were gathered in groups of fifty or sixty in different parts of the village. Sheltered by light structures built of palm leaves, they were grinding corn, baking

tortillas, and cooking other food. Chatting was in lively progress. Some women were carrying water, children were playing around, and in the background some of the elder men were watching the behaviour of the gay youngsters. The colours of the women's skirts and belts, their bronze bodies and their black hair adorned with flowers made an excellent picture.

We walked from group to group watching the work, and were able to persuade the Indians to sell us some of their bows and arrows as well as some samples of the textiles made in the village.

Our chief "boy," Enrique, gave an amusing description of how he had seen a group of about twenty Indians hauling at a rope trying to throw a bull. The bull jumped about, the rope broke, and the twenty Indians fell on top of each other with much noise and laughter.

Fig. 43—San Martin Pajapan, Ver. Idol from the top of the mountain.

The Indians were much interested in our photographing and we were requested by the elders to take some pictures of the village saint. This could not be done in the dark interior of the church, so the saint was moved to the door, which called for much ceremony and drumming. Several Indians were beating wooden drums made out of hollow logs covered with deer skin. Those who were carrying the saint never touched it directly with their hands, but used a cloth when handling the image. They set the saint on a table and decorated it with natural and paper flowers; whereafter we took his photograph. (See fig. 52.)

Our friends were urging us to stay for the fiesta, but unfortunately we were not able to do so. We packed our animals and left these friendly "bloodthirsty" Indians, who had treated us with so much kindness.

A broad trail leads to Chinameca, a station on the Tehuantepec railroad, but unfortunately there is also a broad trail leading to

some of the Indian corn fields. We took the wrong trail which cost us two hours delay and forced us to ride very hard in order to reach Chinameca in time for the daily train to Puerto Mexico.

All along the road we met parties of Indians on their way to the fiesta in Tatahuicápa, the men generally riding and the women trotting behind carrying baskets and bundles. A little procession of Indians, in all seven or eight men, all of whom had had several drinks for breakfast, stopped on the roadside at one point, and every one of them insisted on shaking hands with us. As we rode along the line, we bent over from our horses and shook hands with each and every one of them, wishing them a pleasant fiesta.

We were now down on the lowlands, in the Coatzacoalcos basin. Within sight of the station, and right in the main street of Chinameca, our rush to catch the train was stopped by one of the pack horses running into a mud hole and getting bogged. The delay was irritating, but had no serious results. We had to unload, and haul and pull the poor animal before we got it out, but reached the station with just time enough to pay off our boys and check our baggage. Late that afternoon we reached the town of Puerto Mexico.

Chapter IV

OBSERVATIONS OF THE INDIANS OF THE SAN MARTIN PAJAPAN REGION

The San Martín Pajápan area between Lake Catemaco and the coast is occupied almost exclusively by Indians speaking Nahua and Popoluca. The country is mountainous, rainy, and extremely fertile. The lower parts are covered with thick jungle; the higher, whether from clearing or through a change in soil, are open grass and oak country; while the slopes of the San Martín Volcano itself are covered with jungle and thick woods. This growth of jungle, a quantity of steep ridges and deep stream beds, and the mountainous quality of the interior have made it difficult of access and a natural refuge, for which reason, probably, it has been so well preserved to its original inhabitants.

At the time of the Conquest, Montezuma had Aztec garrisons at several points in this region. The Spaniards regarded it as part of the province of Coatzacoálcos, and some of the Conquerors held land-grants in the area. Early descriptions of the area are meagre, and not until 1746 do we get much information about the towns and inhabitants. In that year, Villa-Señor y Sanchez published his book, "Theatro Americano . . . " and though he deals only with part of the towns, he gives us some idea of the fertility and general state of the district, for which reason we quote him here at some length.*

"CONCERNING THE JURISDICTION OF ACAYUCA AND ITS TOWNS†

The town of Acayuca (Acayucan) is the capital of the province of Guzacualco (Coatzacoalcos) at a distance of 100 leagues from the city of Mexico. It is situated on the northern coast, but the district starts to the southeast. Its temperature is warm and humid, and the land so fertile that it gives four crops of corn a year; and, as this has no outlet to other jurisdictions, this same abundance of crop is the cause of the Indians being very little energetic in working, because to make their fields, they only have to cut the bush and make holes in the ground with pointed sticks, and they do the same with beans, without using plow or any other implement of cultivation. Here the Alcalde Mayor lives, together with the Governor and Officials of the Indian republic. Its population consists of 13 families of Spaniards, 296 Indians, and 70 of Mestizos and Mulatos. It has a district church with a priest and a vicar who speaks the Mexican language. This is a

*Villa-Senor y Sanchez, 1746. Chap. XXVIII., Page 366.
†Modern names are given in parentheses.

small number of preachers for such a backward administration and large number of parishioners, and some of the towns are at such distance from the principal town that they in many days do not have a chance of even hearing the sacred mystery of the mass, for which just reason it would be of service to both majesties to establish some mission in this province.

"The towns pertaining to this doctrine and government are: San Pedro Xocotapa located in the hot zone on the southern slope of the San Martin Mountain at a distance from the principal town of eight leagues, and it contains 358 families of Indians; the town of Macayapa (Mecayapan) is also located on the slopes of said mountain, but towards one-quarter northwest, two leagues distant from the last mentioned town, and is inhabited by 107 families; to the east of said principal town at a distance of one league is the town of Santiago Zoconusco (Soconusco), having 295 families; the town of San Juan Olutoa lies one league to the southeast, and in it live 97 families; in the same direction is the town of San Miguel Thesistepec (Tesistepec) three leagues from the principal town, and having 50 families; and the one named San Andres Zayultepec (Sayultepec) at a distance of two leagues, located between north and south, and with a population of 140 families of Indians; the climate of these towns is warm and humid and their trade and maintenance are their corn fields, beans, fruits, and rope of fibre (pita) which makes the best rope for general use, and has its market in many parts of this kingdom as substitute for the fine French twine which is brought here from Europe.

"The town of San Juan Tenantitlan is a republic of Indians with a governor and is the principal town of the curate of Chinameca (Chinameca). It is eight leagues towards the east from the principal town (Acayucan), and is situated in the hot climate. Its population consists of 50 families of Mulatos [Mulatos Milicianos], and 32 of Indians who speak the Popoluco in which they are preached to by a priest of their district church, and to which doctrine and government the following towns belong: the one of San Francisco Menzapa at a distance of eight leagues to east one-quarter northeast, inhabited by 63 families of Indians; and at the same distance is located the town of Oteapa (Oteapa) towards the east one-quarter south, and in this town are 69 families; following the same direction and at a distance of ten leagues is the town of San Felipe Cozolcaque (Cosoleacaque) with 51 families; the town of San Francisco Xaltipac (Jaltipan) lies at a distance of six leagues towards the east of the principal town and in it live 97 families of Indians who trade in the same fruits as those of the principality.

"The town of Santiago Moloacan (Moloacan), eighteen leagues from the principal town in direction east one-quarter southeast, is the principal of the district of the Ahualucos numbering 109 families of Indians including those of the town of Pochutla (Pochotla), which lies so close that it is only separated by the distance covered by one shot of a musket. At a distance of eighteen leagues is situated the town of San Cristobal Ixhuatla (Ixhuatlan), in warm climate and with 47 families. The town of San Francisco Ocuapa is the principal of the district of the Ahualulcos, is forty-three leagues distant from the principal town towards the south, and is inhabited by 4 families of Spaniards, 20 of Mulatos, and 20 of Indians, who are preached to in the Popoluco language by a priest of the district church of this town, under which lies the previously mentioned town, and the one of San Cristobal Huimanguillo, with its suburb San Pedro Ostitan, a distance of five leagues towards the south from the head town, and in these two the number of Indian families is 66; and in the same vicinity is that of Macatepeque (Mecatepec), one league towards the east with 18 families; and the one of Tecominucan, two leagues away following said direction and having 26 families of Indians, who cultivate the same fruits as those previously mentioned, and they are the only ones

in this jurisdiction who do, because though they have cattle and cultivate fruits and vegetables, it is only in accordance to the annual consumption of the inhabitants, as they, for the greater part, occupy themselves little with the cultivation of the ground.

"The province suffers from the great calamity that it at certain periods is flooded with grasshoppers, which destroy the plants and fields in the most sad way, and, as no human remedy has been found for such great destruction, the inhabitants have sought the favor of the divine forgiveness through help of the most holy Virgin, miraculous in the mystery of the pure conception, whose picture can be seen in the head town of this district, Chinameca, whose patron saint she is, because she has freed the fields from these obnoxious insects, and this marvel has been felt because when the insects abound, they take out the holy image in procession, then the number of insects diminishes and the destruction which they cause to the fields stops.

"This country is watered by the large river Guazacualco, which gives its name to the province. It runs from north to south, always running in the center of the province until it empties in the sea, and on its banks on each side grow trees of great height capable of serving as they, in fact, do for the construction of large ships, for which reason woods, spars, boards, and whole trunks are carried to Vera Cruz, and at the present moment this business is run by the Royal Hacienda. It is a fact that if the cutting of trees was more regular they would be more useful and the Bar of the Guazacualco river would be constantly protected if the town of Espiritu Santo would again be inhabited, but this town now is totally abandoned, and the name only remains of that which it once was."*

At present, in the interior as at Mecayapa, mentioned by Villa-Señor y Sanchez, there are no avowedly "mestizo" or non-Indian families to be found.

If this description is accurate for its period, the Popoluca ("Populoco") area must have considerably diminished. Huimanguillo, there mentioned, is no longer in the definitely Indian territory; Chinameca has become a sophisticated town of the ordinary Mexican type. The Nahuatl group has been, on the whole, expanding, side by side with the Spanish.

At Piedra Labrada we were told that the following towns still speak Popoluca:

Ocozótepec,
Soteapan,
Amamelóya,
Ocotal Grande,
Ocotal Chico,
Aguacate,
Cuilonia,
Buena Vista,
Piedra Labrada.

These towns make a small island, or rather a group of islands, scattered about among Nahua-speaking and Spanish peoples.

*Abandoned because of frequent attacks by English Pirates.

PHYSICAL CHARACTERISTICS

The physical make-up of the Indians does not appear to vary with the linguistic division, save that the Nahuatl groups may be a triffle broader in face, and heavier built than their neighbours. On the whole they are of good stature, estimated at about 1.65 meters for the men, with round heads, brachycephalic, and fairly high-bridged noses tending to mesorrhine with some platyrrhine. The brachycephly is emphasized by a flattening of the skull just above the forehead, due in the men to the use of the tump-line from early infancy, causing the skull to come up to a conical point in back.

Musculature is heavy, especially in the legs (see figs. 44 and 50). Very small boys begin using the tump-line to carry fire-wood, ac-

Fig. 44—Tatahuicapa, Ver. Trading for arrows with the Indians.

customing themselves to considerable burdens, although in this respect they are not so specialized as the Tzeltal and other Chiapas tribes later observed, nor have they developed, as with these latter, a walk which, even when unburdened, suggests the burden-bearing habit.

The women do not use the tump-line, but carry loads on their heads, carrying a small ring of cloth for that purpose. This practice gives them a very straight carriage and great grace of movement. The large gourd borne by the woman in fig. 35 is a typical water-vessel, and when filled must have no small weight.

In common with most Indians of Mexico, these are capable of sustained travel on foot without fatigue. A guide who accompanied us from Piedra Labrade to Tatahuicápa, an eight-hour trip over a

very bad trail, was always ahead of the horses, obviously slowing his pace at times so that they might catch up, and less exhausted than they at the end of the day. Anyone who has travelled with Indians in Mexico can duplicate this experience.

Hair-form and distribution is typical, the form being straight, black, and coarse, its distribution sparse on the chin and rare or lacking elsewhere on the body. Short, straggly beards on the chins of the old men may have some correlation with the more long-faced type; not enough bearded people were seen, however, to assure this.

Eyes are dark brown, and fairly wide set. No marked Mongoloid traits were observed.

LANGUAGE

The Indians belong linguistically to two stocks, the Nahuatl, and Mixe-Zoque. The Nahuatl is predominant, being spoken probably by a population of several thousand. The Mixe-Zoque is represented by one of the many dialects known in Mexico as Popoluca. The name is unfortunate, for the various Popolucas are unrelated; Berendt* says of them, "It is a grave error to consider all these different . . . Popolucas as scattered parts of the same whole." The nearest dialect of that name to Pajápan is Popoluca of Puebla, which is entirely distinct, being associated with Mixteco.

No attempt was made to study the Nahuatl, beyond noting that the final *l* of the nominal ending *tl* was dropped off, as *cuauhuit* for *cuauhitl,* and that the *n* of the suffix *pan* was often omitted, Pajápan becoming Pajapa in daily speech.

Lists were made of Popoluca at Ocozotepec (called *teuj'ko* by the natives), and at Piedra Labrada, which while lacking in grammatical forms and very brief, supports Berendt's* statement that the language belongs to the Mixe-Zoque stocks although the affiliation would appear to be more directly with Zoque, and not, as he said, with Mixe. Out of 145 words compared,† 85 show a recognizable lexical similarity, and root forms may be traced in many more. The verbalizing suffix given by de la Grasserie‡ and Lehmann‡ as *pa* or *ba,* appears in a majority of the Popoluca verba as *pa* or *pu,* corresponding to a general, although irregular, vowel-shift from *a* to *u.*

Many words have been replaced by Spanish; and elements introduced in recent times almost always have Spanish names. All men speak Spanish fluently, but the women ordinarily cannot. The native numerals only go up to seven, although we were told that some of the old men could count up to *monyi,* the Mexican *tzontle.*

*Berendt, 1876. Page 9.
†See Appendix for word-lists and more full discussion.
‡De la Grasserie, 1898—Lehmann, 1922.

The presence of a Zoque group here on the Atlantic coast is of considerable interest, giving support as it does to Brasseur de Bourbourg's* theory that the Mixe-Zoque people originally lived north and east of their present home in Oaxaca, being pushed back by the conquering Zapotecs. That theory offers the best explanation for the Pajápan dialect, on the supposition that a small group, split off from the main body, went north to take refuge in this mountainous country.

MATERIAL CULTURE

COSTUME.

The men in all the villages dress in ordinary Mexican-European costume of cotton purchased outside. Ordinarily this consists of white trousers and collarless shirt, sandals, and straw sombrero of local make, with a slightly smaller brim than that used by Mexicans. Ready-made coloured trousers and shirts are not at all uncommon. At Pajápan there is a store, and in the other villages traders coming in at fiesta times bring such goods. Their hair is worn short, and banged across the forehead (see fig. 44).

The women wear skirts and sashes of their own weaving (see figs. 35-36). The skirts are uncut rectangles, wide enough to reach from the waist to the ankles, and long enough to go well around the body and overlap, without hampering the legs. The width is obtained by sewing two strips together. These skirts are striped, either with broad bands of colour divided by lines, or narrow stripes on a coloured background, always running the long way of the cloth. Buff, grey, yellow, and blue predominate; red is more highly prized, but we were told that the red dye could only be obtained by trade. The other dyes are made from native plants.

Ordinarily the women do not wear any other clothing, save in the towns nearest the railroad. In time of fiesta, however, they do wear blouses, which are bought from traders. Cheap earrings and necklaces, preferably rosaries are worn.

The hair is done in two braids; on the head it is drawn tight and parted down the middle. Bright-coloured flowers are placed over the ear or worn in a chaplet by women of all ages.

HOUSES *(tek!)*.

Dwellings are built with palm-roofs and stick or dirt walls, with a rectangular ground-plan. The essential frame-work consists of four uprights on which two long plates are laid, following the lines of the two long walls of the house. The corner-posts are often of very heavy, squared logs. Between the plates four cross pieces are

*Brasseur de Bourbourg, 1859.

laid, with ends projecting. From these the frame-work of a gable or of a hip roof is built up to the ridge pole. Thatching-poles are laid along this frame-work, parallel to the ground. The members are tied together with vines (see figs. 31 and 34).

The wall *(tuk'ntana)* is of sticks or roughly split boards set into the ground and standing independent of the house. If the wall is to be of mud, the sticks are set about 20 centimeters apart, and cross-sticks are interwoven at the same interval, forming an open wattle. On this a mixture of mud and grass is built up. For a stick or board wall, the upright members are placed at an interval of about a centimeter, and bound together by passing long, slender vines in a loop around each for the length of the wall.

The thatch is of grass bundles, from 20 to 60 centimeters thick. It is allowed to hang low over the eaves (see fig. 31).

The floor is sometimes partially boarded to serve for storing corn, and the space over the cross pieces is often similarly made into an attic, for corn or general storage.

The fire and kitchen may be indoors, but are usually in front of the house, or under a wall-less shelter hard by. The metate is supported on a low table, with legs sunk into the ground. The fireplace itself consists of three stones, to support the round-bottomed pots (see fig. 49).

The doors face south, to get the sun, and away from the constant cold winds and rainstorms coming down from the volcano to northward.

Community structures are built on the same principle as ordinary houses, with the exception of some churches. The *Cabildo,* or Town Hall, is always mud-walled, usually a little larger than the dwellings, and provided with windows and hinged doors (fig. 45). Large shelters of thatched roofs without walls are maintained for shade, and for the common preparation of food at fiesta times. (See Social Organization, fig. 51).

The churches may be, as at Ocozotepec and Mecayapan, merely unusually large buildings. Whenever possible, however, they are tiled roofed, and occasionally, as at Tatahuicápa, of brick and stucco. The plan remains a plain rectangle with a gabled or hip roof. At Tatahuicápa the very simple facade shows a faint echo of Spanish tradition (see fig. 33).

Near the Trans-Isthmus Railroad some attempt at decoration of houses was observed. At Mizapa the church, although grass-roofed, was white-washed, with a dull red and ochre stripe painted around

it, floral designs on the side, and a crude facade painted on each side of the door. At Chacalapa several houses had stripes and floral decorations. This is the most sophisticated section of the Indian country.

WEAPONS.

Ethnologically, a feature of unusual interest is the revival of the bow and arrow among a people who had almost forgotten its use. At the end of the Diaz régime, archery was, as with us, an amusement for children, who made small bows of sticks, fitted probably with unpointed arrows. Such play outfits may be seen in many Indian houses today in Southern Mexico. They are not much superior to the blunt-ended arrows and cotton-stringed bows sold to American children, although they are in more common use. About

FIG. 45—Ocozotepec, Ver. The Municipal House.

1910, or shortly thereafter, large groups of outlaws came into the Pajápan country for refuge, who immediately proceeded to take all fire-arms from the Indians. The latter thus found themselves not only defenseless in the presence of a well-armed enemy given to plundering their villages, but deprived of the means of hunting, an important factor in their food-supply.

The Indians reverted to the bow and arrow, which, at the time of our arrival among them, had been developed for some fourteen years into a powerful weapon (fig. 47). We found here a situation which must in some degree re-enact the original evolution of the bow and arrow at the time of its first invention. In many respects these weapons here are unique among primitive tribes, and in each case the distinctive character is one of incomplete development and still active experimentation.

The bows *(bekcin')** average about 1.15 meters in length, are unbacked, plain, with a slight tendency to a reverse curve. Saragossa wood is preferred. The fish-arrows *(kaapi")* which have a pointed, very heavy iron wire head, average 80 centimeters in the shaft, and 50 in the head. Light reed shafts are preferred. Deer arrows, with laurel-leafed heads of hammered iron, are about 60 centimeters in the shaft, with a head averaging 10 centimeters in length. Ordinarily, the arrows are notched. Feathers are never used (fig. 46).

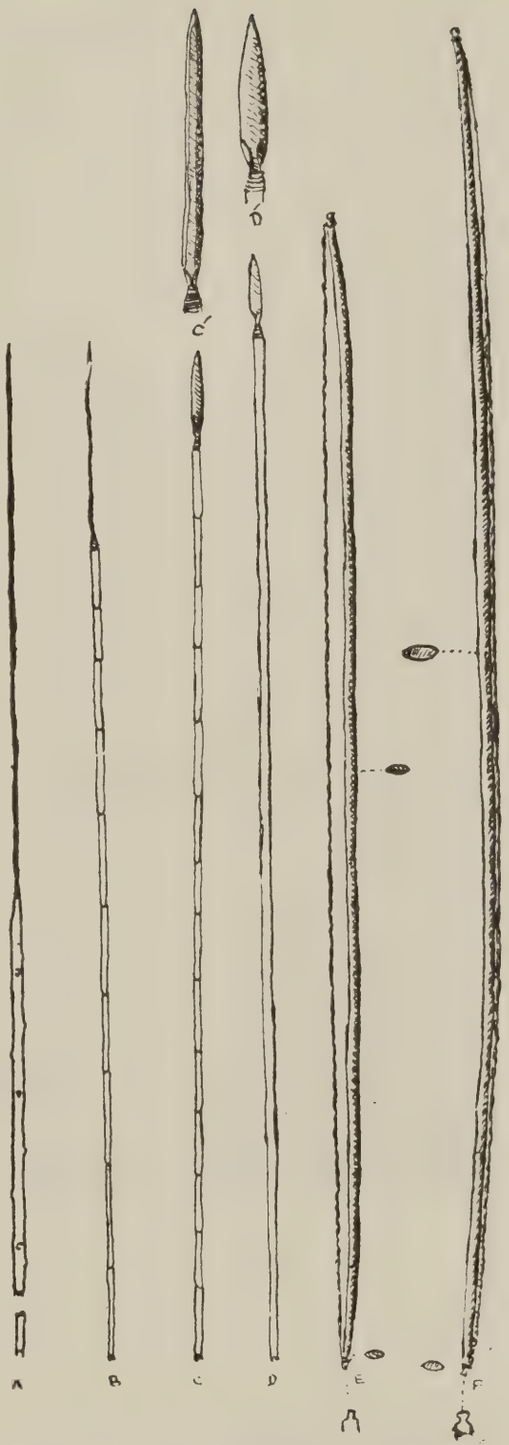


FIG. 46—San Martin Pajapan, Ver. Bows and Arrows.

The unique characters to which I have referred occur in the complete lack of standardization of any part. The statement given above summarizes the general type, and the form towards which the bow-makers are tending. At present, it may be said that no two bows or arrows are of the same length. Some bows are finely smoothed, rounded on one side, flat on the other; some are knotty, retain part of the bark, and are almost flat, or faintly convex, on both sides. In most cases, the curved side is towards the string, but not in all. The string itself may be of ixtla, hennequen, or cheap, commercial cord; it may be finely braided, two or three-strand rolled, or a loose, fuzzy twine. The detachable end may be tied in a loop with a bowline or square knot, or made fast with a timber hitch. The fast end is usually tied with a clove or timber hitch.

The deer-arrows are fairly well standardized, probably because the difficulty of working the iron enforces a standard, small size of head. Fish arrows, on the other hand, show the widest possible

*"Popoluca" names are given.

variation. There is no constant relation between the shaft and the head. The shortest observed was little over 80 centimeters in total length; the longest, taller than the man who sold it, and twice the length of his bow, was 1.75 over all.

Ordinarily, bow-using tribes standardize their weapons very exactly in form, decoration, and either by an absolute measurement or by a set relation to the body of the archer, as we standardize skis. Moreover, the number of arrows to a set is often prescribed; as, with the Lacandone, a quiver must contain one arrow of each kind made; or, with the Navajo, arrows are always made in fours. In the Pajápan country there is no such specification. The number of arrows varies from one to four, and deer arrows may or may not be included. The metal used for these arrow-points is thick fence wire for the fish arrows, and old discarded files, bought in the villages by the railroad, for the deer arrows. These files are cold-hammered by the Indians to the desired shape.

Fig. 47.—Ocozotepec. Ver. Popoluca man showing the use of bow and arrow.

It would be interesting if the development of this weapon here could continue; however, guns are rapidly being re-introduced, and probably the bow will disappear, unless the easily-made arrow for fishing, already by far the more common, is retained for that use.

The names "fish" and "deer-arrow" are taken from the Indians themselves. The deer-arrow, we understood, is also used in fighting, and the fish-arrow, while best adapted to shooting fishes, is certainly put to many other uses.

The fire arms now coming back are the usual percussion-cap, muzzle-loading fowling-piece, with a few bolt-action rifles provided by the government to assist the Indians in keeping the country free of refugee outlaws, which, when properly armed, they seem well able to do.

ARTS AND INDUSTRIES

TEXTILES.

The loom in use is the usual, narrow, simple type, with single heddle. The head stick is made fast to a branch or stick in the wall; the foot is fastened to the weaver (see fig. 59). Weaving is done by the women. This loom weaves long, narrow strips of cloth for skirts (see costume). Both warp and woof are handled in double strands of fine cotton thread.

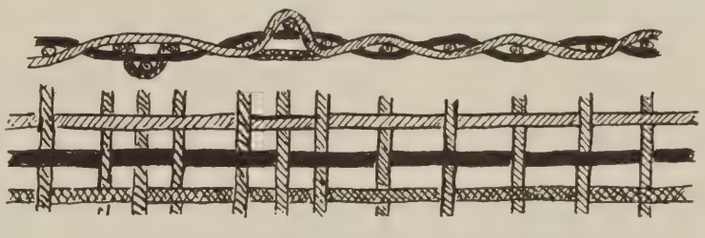


FIG. 48—Tatahuicapa, Ver. Drawing of Weave.

The ribbed weave of the sashes is more intricate. We did not find out how it is done, or if a special loom is used (fig. 48). Looms are seldom to be found in use, as weaving is only done as the cloth is needed.

The spindle is a stick about 18 centimeters long, with a clay disk near the bottom for a weight. The lower end is placed in a small half-gourd for spinning.

WOOD-WORKING.

The native mandolin, or *jarana,* is made by the men. In shape and size it resembles a ukelele, but is adapted to playing actual tunes. Tobacco pipes are made, with very small bowls and reed stems. (See also the description of bows and arrows under Weapons). Chairs and squatting seats are made of wood. The chairs are of a simple European model, straight-backed, with a square seat. All the pieces are nicely mortised into each other, and held with wooden pegs or, occasionally, nails. The work is neat and well finished. Squatting seats are simply squared light logs, with a handle at one end and often concave on the under side to save weight.

OTHER CRAFTS.

The arrow-points mentioned under Weapons are made locally. The fish-arrows have for head a length of heavy iron wire, about 3 millimeters in diameter, hammered at the end to a four-sided point. The head of the deer-arrow is a laurel-leaf shaped piece of iron, hammered out from a file, with a shank at the butt to insert in the end of the shaft. It is ground smooth and is fairly sharp all around.

Pottery is undecorated and simple. The typical form is nearly a sphere, with a wide mouth and slight curved lip. (See pot carried by woman in fig. 35). Gourds are used as much or more than pots.

Baskets are of wickerwork, with split reed warps and splint frames.

Metates are ordinarily bought from stores in the outside towns, but old metates found buried in the neighbourhood of prehistoric sites are much preferred, and used whenever obtainable. Volcanic rock, suitable for making metates, is to be found in the area, but presumably the Indians prefer excavation or purchase to the toil of manufacture (see fig. 37).

FOOD SUPPLY

AGRICULTURE.

The rich soil of the jungle sections is ordinarily used for farming, in preference to that of the more open, grass and oak country.

Fig. 49—Piedra Labrada, Ver. Populca Indian woman grinding corn, and girl baking tortillas.

It is possible, indeed, that the open land is produced by partial exhaustion of the soil due to "bonanza" methods of farming.* Abandoned fields that we saw were growing up in grass and small, thick second growth.

The jungle is cut, and the dead wood burned on the field, after such wood as may be useful is carried off. On the whole, the clearing here is neatly done, the fields being fairly free of rubbish. The soil is prepared with a digging stick, only the top soil

*The effects of soil depletion from Mexican Indian methods of farming are described in detail in O. F. Cook's "Vegetation Affected by Agriculture in Central America," 1909.

being disturbed. There is no plowing. Old machete blades are used for weeding.

Corn is the staple crop, and to it the larger part of every field is given over. With it are planted beans, melons, papaya, pineapples, and sweet potatoes. Gourd trees are cultivated, and a bush with a red fruit called in Spanish *ajon,* used for flavouring meats. Two crops of corn a year are raised except at Piedra Labrada where three are usual.

Small coffee plantations are made in jungle or woods handy to the town, the underbrush being cleared out.

DOMESTIC ANIMALS.

Pigs are kept by all families for food, and also serve as scavengers. Poultry provide both meat and eggs. Keeping cattle is rare if not unknown.

Besides cultivated plants and flocks, many wild fruits are eaten, and game, especially birds and wild pig, are important. The Indians hunt fish with spears, arrows, and traps in the many rivers of the country.

SOCIAL ORGANIZATION

The general governmental system is that of a Mexican district, with its center at Pajápan itself. The individual villages have each their *Presidente Municipal* and *Secretario,* elected as in any Mexican town. The feeling, however, is not that of belonging to the district as a whole, but of independent villages related to each other only in so far as their interests join, and as the local officials at Pajápan can make their influence felt.

Fig. 50—Piedra Labrado, Ver. Indian boy with bow and arrow.

INTER-VILLAGE RELATIONS.

The local native garrisons, or "Guardias Municipales," maintained by the government to suppress banditry, occasionally serve also as the nucleus for village war parties, in the occasional disputes over lands or rights. Thus Tatahuicápa, a town of some four hundred families, is sometimes

hostile with its neighbour on one side, Mecayapa, because Mecayapa, although smaller, is the head town of the sub-district. It has also had fights with Pajápan, its other neighbour, over the ownership of a coffee plantation.

It must not be inferred that the villages are constantly quarrelling, rather the reverse. Although the Pajápan people came and destroyed the Tatahuicápa brick-kiln when the latter were building their new church, and they, in turn, had recently possessed themselves anew of the coffee land, Indians of Pajápan came freely to partake of the general hospitality of the Tatahuicápa fiesta.

Fig. 51—Tatahuicapa, Ver. Women preparing tortillas for the Fiesta.

FAMILY GROUPS.

At Piedra Labrada we had occasion to observe a single family, attached to no village, whose organization, thus noted in isolation, may be taken as typical of the whole area. The father is the head of the family, and carries on business negotiations as far as they affect the whole. Individuals, however, have their own possessions and rights. One of his sons, hiring out to us, made his own bargain, and, in other cases, where we bought textiles woven by the women, either the women did the trading, or dictated the price charged by the men. In case of marriage, the man pays the woman's father, in goods and labour. Once the marriage is completed, the new couple sets up its own unit independently. Between such separate groups the ties are very much the same as those between related families

among ourselves, with, perhaps, less recognition of the influence of the original head of the family.

The men work in the fields, cut wood, hunt, and take a hand in shelling and stacking corn. Women also work in the fields and cut wood, but their chief care is the house and the kitchen, drawing water, grinding corn, and weaving.

FIG. 52—Tatahuicapa, Ver. The Village Saint, San Isidro.

COMMUNITY PROPERTY AND LABOUR.

Ownership is individual in all smaller things. Land, however, forms of labour which affect the village as a whole, and property connected with religion are common. The village land has been allotted to it originally by the government, individuals hold parcels so long as they occupy or cultivate them. Fighting the present

plague of grasshoppers, and occasionally the clearing of large new areas are undertaken co-operatively.

At the time of a fiesta, food must be prepared for the whole village and a tremendous number of guests. This is done by all the women, working together under big sheds maintained for that purpose (fig. 51). The village of Tatahuicápa owned a bull, which was killed on the day of the fiesta for distribution to all guests and to the village. Evidently this was not an old custom, at least in this form, for none of the men in the village knew how to slaughter the animal, and one of our men had to do it for them.

Fig. 53—Ocozotepec, Ver. Indians beating drums in honor of their Saint.

RELIGION

All the Indians of San Martín Pajápan are Christian in doctrine. In each village the church, always the most important building, houses the patron saints (fig. 52). Near to it are lodgings kept for the occasional visits of the priest. These visits, and the Saint's Day of the town, are the occasion for fiestas, a combination of ceremony and celebration. Drumming, music of flutes, *jaranas,* and various foreign instruments, such as mouth-organs, accompanied by rattles, begin sometime before the fiesta proper. Dancing is done before the saint, as a rite, and generally as an amusement. Often, as at Ocozotepec, the image, there a Virgin, is moved out into a bower of green branches hung with streamers (fig. 53). Whenever the saint moves, whatsoever the occasion, drums must be rolled, as

when the saints and altar were brought forward for us to photograph at Tatahuicápa. Aguardiente is brought in from the Mexican towns for the fiesta, and a supply of rockets which are set off all during the period. General hospitality is extended to all comers.

The visit of the Priest is occasion for baptisms, confession, and mass. The photographs of the saints at Tatahuicápa were wanted for affixing to pardons to be made out by him. The priest is maintained by the village during his stay.

At this time the doorway of the church and the priest's house are decorated with palms. The inside of the church is hung with palms, streamers, coloured paper, and flowers.

DLaF

Chapter IV

THE COATZACOALCOS BASIN

In the earliest reports of the Conquerors we find mention of the Coatzacoálcos River. Grijalva passed the mouth of the river, and Bernal Diaz speaks of it as follows: "As we sailed along we noted the position of the great river, Coatzacoálcos, and we wished to enter the bay (not merely) to see what it was like, but because the weather was unfavourable. Soon we came in sight of the great snow mountains which have snow on them all the year around, and we

Fig. 54—Puerto Mexico, Ver. The mouth of the Coatzacoalcos River.

saw other mountains near the sea which we called the range of San Martín, and we gave it that name because the first man to see them was a soldier from Havana who had come with us, named San Martín."*

The snow clad mountains here mentioned are undoubtedly the peak of Orizaba, which can sometimes be seen from the sea, and the San Martín mountains are those which the Tulane Expedition had just traversed.

Later, when Hernán Cortes had arrived at Tenochtitlan, we again hear of the river. He was looking for a port more favourable

*Bernal Diaz. Maudslay translation. Vol. I., Page 50.

than the anchorage off the coast at Vera Cruz and men were sent along the coast guided by Indians, and with a map drawn on agave cloth. The leader of this expedition was Diego de Ordaz. They followed the coast until they reached the mouth of the Coatzacoálcos without finding any other suitable port. Montezuma had told Cortes that he did not reign over the tribes living along the river, and he gave an order to the chieftain of his garrison somewhere near it to aid the Spaniards as much as possible.

When Ordaz reached the river the local chieftain, Tuchintecla, gave the Spanish explorers canoes so that they could make soundings (fig. 54). "They found the shallowest part at its mouth, 2½ fathoms in depth, and 12 leagues up the river they found the greatest depth of 5 or 6 fathoms. From their observations they judged it had about the same depth for 30 leagues up from its mouth. On its banks are many large towns with an innumerable population, and all the province is level, and rich, and abundant in produce."*

Bernal Diaz further writes: "When Ordaz had taken the soundings he went with the Caciques (chieftains) to the town, and they gave him some jewels of gold and a very beautiful Indian woman and they offered themselves as servants of his majesty, and they complained of Moctezuma and some of his warriors."†

A little further in the same narrative it is told how the inhabitants fought the Mexicans and killed many of them. The place where this battle was fought they called *Cuylonemiquis,* which in their language means "where they killed the Mexican profligates." This may be the place named "Cuilonia" today?

Still later, Cortes sent another expedition to the Isthmus and Bernal Diaz joined this. Now the Spaniards found the natives hostile to them. The ill feeling resulted in a battle, in which the leader of the Spaniards surprized the principal town at night, and seized a woman "to whom all in those parts obeyed and everything quieted because she sent to call the chiefs and ordered them to observe whatever was commanded them." The Spaniards then founded the town of Espíritu Santo, and many of the Conquerors received grants of land along the river.

From Bernal Diaz's accounts we constantly hear of fighting with the natives in the district, and also that Doña Catalina Suárez, the wife of Cortes, landed on the coast in a place called Ayagualúlco, and passed through Espíritu Santo on her way to the capital.

The old soldier, Bernal, finally grew tired of fighting and wanted to settle down on his properties, but the Indians did not leave him

*Cortes' Second Letter. Edition MacNutt, 1908. Page 245.
†Bernal Diaz. Maudslay translation. Vol. II., Page 132.

alone. In one of the fights against them he was wounded in the throat by an arrow; then he got orders to join Louis Martín on an expedition to Chiapas, where he underwent more hard fighting. Finally in November, 1524, Cortes came to Espíritu Santo on his way to Naco, in Honduras, and he ordered Bernal Diaz to join him.

This is all the early information we have about the Coatzacoálcos basin. Up until around the year 1800 we hear little about it. Humboldt states that the climate of the area is very unhealthful.*

In 1829 and 1830, several ships left France with colonists for Coatzacoálcos. They had been tempted by a get-rich-quick scheme which quickly broke down. Another ship left in 1831, and one of the participants in this expedition, Pau Pierre Charpenne, tells us about the total failure of this colonization scheme. Most of the French colonists died from fever and several of them committed suicide. Now only a few place names remind one of the struggles and hardships these people went through.†

Cortes was the first to propose a communication between the Atlantic and the Pacific by way of the Isthmus of Tehuantepec. After him came, in 1774, a reconnaissance for a road made by the engineer, August Cramer, in the times of the Viceroy, Antonio Bucareli.

In 1842 a contract was made between the Mexican Government and the Louisiana-Tehuantepec Railroad Company for a steamship line from New Orleans to Minatitlán and a service of coaches over the Isthmus. This road was much used during the California Gold Rush in 1849, and many were the eager gold hunters who died here of fever, on their way to the promised land.

The Louisiana Company did not fulfill its contract, and prolonged discussion followed between it and the Mexican Government, resulting in a new contract of 1852.‡

The famous Americanists, L'Abbé Brasseur de Bourbourg, crossed the Isthmus in 1859-60. He has not much good to say for the way in which the American company managed the transportation. In his book on this voyage he gives a charming report of his experiences, and also a large amount of interesting historical data.§

A more serious study of the Isthmus was made by the U. S. Government engineers, at the direction of the Secretary of the Navy in 1870. This survey was conducted in order to see if it was practicable to make a ship canal from coast to coast. Various methods of crossing the higher points of the Isthmus were proposed,

*Traite Politique de M. de Humboldt sur la Nouvelle-Espagne, 1811.
†Charpenne, 1836.
‡Williams, 1852. Supremo Gobierno, 1853. Ramirez, J. F., 1853.
§Brasseur de Bourbourg, 1862.

such as locks, hauling the ships over on tracks, and a tunnel through the mountains. A very instructive report with many maps and cross sections were presented to the Senate, but no definite steps were ever taken to execute this plan.*

Finally, around the year 1900, a railroad was run across the Isthmus, and a few years later a British firm built huge port works at the mouth of the Coatzacoálcos on the Atlantic side and at Salina Cruz on the Pacific side. For a few years an enormous quantity of merchandise was hauled over this road. Coatzacoálcos, formerly a settlement of a few Indian huts, grew into a town and was named Puerto Mexico (fig. 55). The revolution against President Diaz was a blow to this project and finally the opening of the Panama Canal entirely killed it. Now the magnificent wharves at Puerto Mexico are rotting away, and the Pacific Ocean is building a bar of sand across the mouth of the port of Salina Cruz.

Fig. 55—Puerto Mexico, Ver. Street.

The northern part of the Isthmus of Tehuantepec is watered by the Coatzacoálcos river and its numerous tributaries. The climate is sub-tropical, the year being divided into two seasons: a rainy season from June to the middle of December, and a so-called dry season, during which small showers are frequent. During the months of October and November, strong northern winds, called "Northers," bringing cold and heavy downpour, occur several times a month.

The whole Isthmus is low and swampy, cut by many rivers and dotted with lagoons. The ground is covered with thick, luxuriant, tropical bush, here and there alternating with open savannas. The soil is, for the most part, very rich, though only sparsely cultivated. It is said that some places will give as much as three crops a year.

The town, Minatitlán, was originally the port, exporting mahogany. When oil was found in the region, and a refinery built, the town gained new life. Puerto Mexico now has tank farms and is

*Schufeldt, 1872.

the shipping point for the oil refined at Minatitlán. Though extensive drilling has been conducted, no great quantities of oil have yet been found in this district. All wells seem to produce small quantities of paraffin base oil of very high grade.

Formerly mahogany grew in great quantities along the river bank, but cutting was so thorough that now it is rare to see a mahogany tree.

The Spanish and Mexican population reside in towns, and there are also several large Indian villages, though a great part of the population lives scattered in clusters of small huts along the river banks.

As the archaeological and ethnological material of this area has never been collected, we will give some extracts of notes made by the writer during his stay in the Isthmus in 1920-21.

Mr. Ismael Loya has already been mentioned as the one who first ascended the San Martín Pajápan volcano. He formerly lived in the small town, Jaltipán de Morelos, on the Tehuantepec railroad. Having traveled widely over the area and also having married an Indian woman he possessed a great amount of valuable knowledge. He was the first to draw attention to the monuments at Piedra Labrada, and also spoke of burial mounds in the vicinity of Santecomapa.

Near Los Cerritos, at a distance of about 20 kilometers from Puerto Mexico, Loya had seen some hills which appeared to be artificial and on which are traces of walls. These hills are entirely surrounded by swamps and would form an excellent stronghold.

From the railway station to the town of Jaltipán is a short distance, which now is covered by truck. Just as one enters the town, to the right of the road lie several artificial mounds, the largest of which is called the "Cerro de Malinche. It is said in Jaltipán that Malinche, the famous interpreter of Cortes, was born and raised in the town. All the early chronicles disagree as to the place where she was born. The tradition which still persists in Jaltipán about Doña Marina, the Spanish name for Malinche, has previously been reported by Dr. C. H. Berendt.*

Brasseur states that the Islands of Tacamichapa formed by two branches of the Coatzacoálcos river, was given to the family of Doña Marina by the Spanish crown.†

Mr. Young, of the International Oil Co., which has its offices in Frontera, Tabasco, told us this year that some lands near Chinameca were given to the family of Marina, and remained intact until

*Icazbalceta, Page 178, Note 2.
†Brasseur, 1862. Page 57.

the year 1687. This land was called Chamulco. The owner of it, a woman named Ana Tobar, sold parts of the property in that year. Mr. Young stated that he had seen the documents relating to this property a short while ago.

Doña Marina is one of the most outstanding personalities of the Conquest of New Spain, and the Spaniards would undoubtedly not have succeeded if it had not been for her. It is said that she was born in the province of Coatzacoálcos, and that her mother married a second time, and gave birth to a son. When this son was born she agreed with her second husband to dispose of the daughter, and therefore, sold her to some Indians from the town of Xicalango in Tabasco. As a slave she was sold several times, and finally she was presented, together with nineteen other girls, to Cortes.

In her home she had been brought up to speak the Aztec language, and in Tabasco she learned the Maya. In Cortes' retinue was a Spaniard, Gerónimo de Aguilar, who had lived among the Mayas, and who had joined Cortes when the latter landed on Cozumel Island. Thus, at the beginning of the Conquest, Cortes gave his orders in Spanish to Aguilar, who translated into Maya to Malinche, who again translated into Aztec to the Mexicans. In this way, she was of prime importance to the Conquerors. She soon learned enough Spanish so that she could dispense with Aguilar, and as she furthermore became Cortes' mistress, she was really the one who held the fate of the Spanish army in her hands.

After having risen to great power she again happened to return to her country, where she met her mother and her young half-brother, whom she recognized. Her mother was afraid of her revenge and asked Doña Marina for forgiveness. This was granted and at the same time Doña Marina loaded her family with gifts of jewelry and land. This is the land mentioned in the traditions of the town of Jaltipán.

There are now considerable numbers of Spaniards and Mexicans in the town. They live in houses of brick with tiled roofs, and along the edges of the settlement are large Indian quarters. The surrounding country is likewise inhabited by Indians who all speak the Nahua language, and still maintain many of their old ceremonies. The ancient custom of dancing before the village saint is one of those which has thus survived.

After the Conquest, the friars noted how fond the Indians were of dancing. In order to divert their attention from the idols to the saint, the priests arranged dances in honour of the latter. The Saint-feast of Jaltipán is held on the 30th of August. The Indians from the vicinity take possession of a square in front of the church.

The men are dressed in their ordinary cotton cloth garments, but on their faces they wear masks carved out of wood and painted red and green (fig. 56). Some of these masks have moustaches made of horse hair and we saw one which had a small pair of deer's antlers on the forehead. On their heads they wear bonnets covered with feathers of fowl and the long red tail feathers of the macaw terminating in small tufts of cotton (fig. 57, a, b, c). They all carry hooked sticks and in the middle of the procession walk two drummers, one carrying a small drum, the other a large double drum. These drums are made out of hollowed tree trunks. The small drum is covered with deer skin on both ends, while the large one has skin only on the top (fig. 57, d). The drummers are followed by three

FIG. 56—Jaltipan, Ver. Indians dressed for dancing.

men playing flageolets. After the men come a procession of women, all carrying lighted candles and small Mexican flags.

The procession stops in front of the church and while the women go inside, the men form a circle and commence to dance. About twenty take part in the dance. Carefully following the rhythm given by the drums, they commence very slowly, little by little gaining momentum. Then again they slow down. Sometimes they dance in a circle, one moving behind the other, and sometimes they divide into two parties, each party attacking the other with their staffs. Again they return to the dance in a circle, changing the staff from one hand to the other. The man wearing the mask with the deer antlers leaves the men in the circle, and goes into the center. Then

the man wearing the mask with a moustache also leaves the circle, chasing the person representing a deer. The deer dances inside the ring, sometimes fleeing outside, continually followed by the huntsman, both moving to the rhythmic beat of the drums. The huntsman tries to catch the deer by its left heel in order to throw it, and the deer defends itself with its antlers.

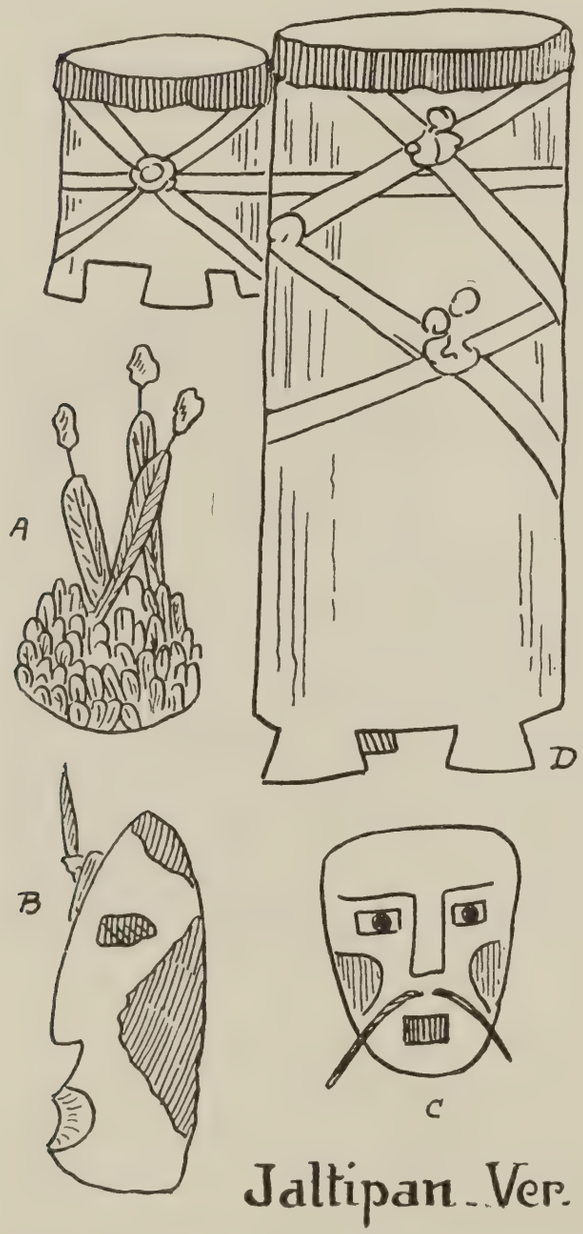


Fig. 57—Jaltipan, Ver. Drum and masks used by the Indians when dancing.

Finally, the huntsman catches the deer, throws it on the ground, and goes through the motions of cutting off its left leg. Then the deer frees itself and quickly crawls away on all fours. The huntsman sneaks after as it tries to escape, and it is caught at last. Then the huntsman cuts off its head and skins it, ending the dance.

During the whole of this pantomime the rest of the dancers have been circling around the two chief actors, moving now slowly, now quickly to the tunes of the flageolets and to the beat of the drums.

After a short pause the Indians begin another dance, a more common one called "Moros y Cristianos," wherein both Cortes and Montezuma, as well as parties of Indians and Spaniards are represented. After finishing this dance, the men also go into the church to worship the Saint of the village.

In Jaltipán the remnants of a collection of antiques made by J. M. Rodriguez was found in 1922. A few words should be said about this man. It is believed that he was of pure Indian descent. He was much given to the study of the antiquities, and eagerly collected the ancient artifacts from the surrounding country. His daughter married a Spaniard named Villegas, and when the old man died, his collections were put

in sacks and moved with the family from one house to another. The greater part of this collection was naturally soon broken to pieces. What survived was given as toys to the children of the family. The only object saved is now in the possession of Señora Villegas. It is a clay bowl (fig. 58). In the house was found the greater part of the old man's collection of books. Among them was a nearly complete set of the "Anales del Museo Nacional" of Mexico, on the pages and covers of which the old man had made a lot of valuable notations, as well as many pencil sketches (fig. 59).

FIG. 58—Sayula, Ver. Aztec clay bowl. (10 cm. high).

Mr. Ansell, an Englishman, living in Jaltipán, says that the greater part of the above mentioned collection came from Tesistepec and Sayula, both indicated on our map. The small bowl from the collection indicates that these objects must have been of Aztec origin.

The most important town of that section of the country is Acayúcan. It is said that a colossal stone figure is found approximately three hours ride to the northwest of this town. This figure is called "La Piedra Colosal de Hueyapan," and cannot be the same as the head described by Melgar and Seler (see page 21). It was removed from its original position before the work of bringing it to the museum in Mexico City was abandoned due to the Revolution in 1911.

If we follow the river Coatzacoálcos upstream from its mouth, we will see some hills on its right bank near Nanchital. Here an ancient mound has been used as base for an oil tank. There are some oil drillings about fifteen kilometers inland towards the east of this place.

A short distance further up the river lies the ranch Tuzantepe, and near by, is a low hill with some large blocks of stone on it.

FIG. 59—Jaltipan, Ver. Drawing of Indian girl, made by Rodriguez.

The Indians of the region state that these stones were brought there by the ancients, "Los Antiguos"; that they found these stones far away and moved them by touching with a magic wand. These stones have the appearance of being an outcrop of rock.

From this place runs the main trail to the large Indian village of Ixhuatlán (fig. 60). The inhabitants of this village speak Nahua and Spanish. The proximity of the oil camps is having a disastrous influence on them. They are acquiring all the white man's vices and getting thoroughly unreliable. The chief product of the village is pineapples, which are carried down to the river by the women and from there rowed to the market in Puerto Mexico by the men. Near the trail at a short distance from the village used to stand an idol, about 75 c.m. high, carved in igneous rock, and representing some kind of an animal (fig. 61). It is now said to have been removed to the village square.

Fig. 60—Ixhuatlan, Ver. The Village.

Further inland is the Indian town Moloacán, where the Indians likewise speak the Nahua language. These Indians have been exposed to influences from the outside much less than those of Ixhuatlán, and do not look kindly upon strangers who stop over night in their village.

Half way between this last village and the ranch San José del Carmen, on the Tancochápa river, some idols are reported near Paraje Solo, where there is also an outcrop of volcanic rock. Oil seepages are frequent throughout this region.

Several mounds lie scattered over the savannas around San José del Carmen, and J. J. Williams, who worked on a survey of the region in 1852,* tells us the following:

"It seems important to state that in connection with the finding of precious metals in these streams, that among the many remains of the indigenous people who formerly occupied this locality, there are a number of artificial wells on the west bank of the Tancochápa,

*Williams, 1852.

which seem to be rather huge jars of earthenware, four or five feet high and three in diameter, buried in the ground, and which correspond precisely to those now (1853) existing in Sonora and other gold districts of Mexico. The peculiar construction and locations of these receptacles, and the abundance of drinking water in close proximity, justify the conclusion that they were formerly used for washing gold . . .

"The number and variety of mounds found near San José render it a place of considerable interest. These are scattered over various points and generally composed of chalky earth, alternated by various coloured clay, beneath which are fragments of ancient vessels. In examining some of these mounds, several c o p p e r hatchets and other antiquities have been discovered. The banks of the arroyos exhibit g r e a t quantities of plumbic ocre, and usually intersect strata of variegated clay suitable for purposes of pottery."

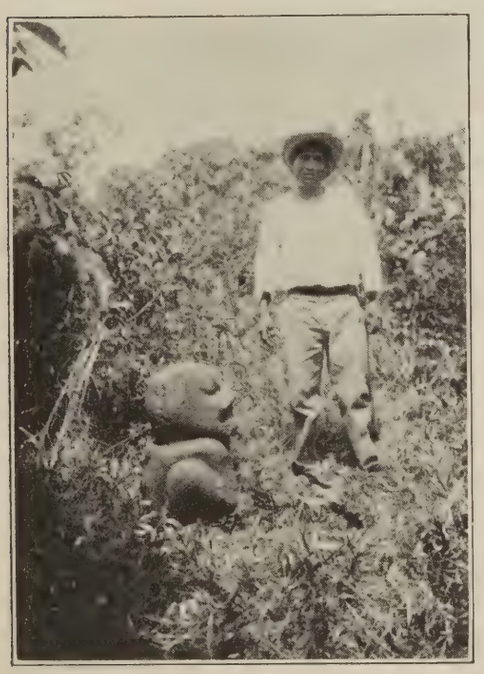


Fig. 61—Ixhuatlan, Ver. Idol found near the Village.

Mr. Williams states that gold has been washed in the rivers of the district. Now and then a few grains can still be washed out of the river sand, but the amount is so small that it has not been found profitable. This view is confirmed by the reports of the Conquerors, who tell us that they found only gold of poor grade in this district.

Unfortunately the writer was not acquainted with the Williams report when he, in 1921, passed through San José del Carmen, so that he was not able to investigate the wells which are mentioned.

Returning to the river, we continue upwards until we reach Paso Nuevo. It is the tradition that the town Espiritu Santo, the first town founded by the Spaniards, was located here. Now one only sees a few wretched huts on a hill. The surrounding corn fields, though, are full of potsherds and obsidian chips.

Thirty kilometers up the river from its mouth we pass the Uspanapa river, one of the main tributaries to the Coatzacoálcos, and shortly afterwards we reach the large oil refinery at Minatitlán, and the village supported by this industrial plant. It is an unattractive place, and the native inhabitants are more so.

Antiquities have been found in a multitude of places along the Uspanapa river. At Filesola, pottery was found; in Ribera del Carmen and Tecuanapa, large quantities of pottery in streams; in Cascajal, a pottery stamp of Aztec type (fig. 62). Arroyo Mancuernillas is well known among the Indians because they have found many ancient corn-grinding stones (metates) at this place.

Fig. 62—Cascajal, Ver. Clay Seal. (Half Size).

The area is of importance, as the contact line between western civilizations, such as the Totonac and Aztec, with the eastern, the Maya, must have been here.

A small clay figurine such as the one found by the oil camp near San Cristobal on the Coachapa river suggests Maya influence (fig. 63). On the other hand, the clay seal from Cascajal further east is purely Aztec.

Puerto Mexico has nothing attractive about it. Some high sand dunes face the Gulf, and in the lee of these lie a few streets of miserable houses (see fig. 55).

The greater part of the houses are built of board and corrugated iron; only the offices and quarters of the oil companies are built of brick. When it is dry and windy, sand blows into everything, and when it rains the streets turn to rivers which carry the refuse of the town out into the big Coatzacoálcos river.

In this hole we stayed for ten days waiting for a boat to take us to Frontera in the State of Tabasco. Telegrams received told us that Director Gates of the Tulane Department of Middle American Research, as well as the members of the Tulane Botanical Expedition to Tabasco, Messrs. Haskell and Hartenbower, would soon arrive by steamer from Vera Cruz.

Fig. 63 — Coachapa, Ver. Clay figurine. (Half Size).

On the Expedition schedule was a visit to some ruins reported near Tonalá, five hours ride from Puerto Mexico, so for several days we tried to get animals in order to ride eastward along the coast to Tonalá, and from there search for the ruins. But the recent De la Huerta revolution, of which Puerto Mexico was for some time the headquarters, had done away with nearly all private animals, and the horses available cost up to $7.50 a day.

However, we were able to charter a small sloop, and boarded it in the belief that such a small craft could go and come as it pleased;

but no, both customs officials and port captain had something to say about it, and as the port captain was going on a picnic, he would not give us clearance papers to leave port on Sunday morning.

At last on Monday morning we hoisted the Tulane pennant on the good sloop "Lupata," and sailed out into the Gulf. We followed the low coast towards the east. With all sails set and a small auxiliary motor running we made good progress, and after four and one-half hours we entered the mouth of the Tonalá river.

Tonalá means "hot place" in Aztec, and the sun certainly was blazing down on the sandy "streets" of the small cluster of palm huts which forms the town.

The little settlement lies picturesquely hidden behind sand dunes beside a shallow bay formed by the river, which is the boundary between the States of Veracruz and Tabasco. It was here that Bernal Diaz landed in 1518 when he was on Grijalva's memorable trip of discovery along the coast of Mexico. Let us use Bernal Diaz's own words: "There came many Indians from the town of Tonalá which is at a distance of about one league from here, and they were very peaceful, and they brought us bread of corn, and fish, and fruits, and they gave it to us with good will, and the Captain flattered them much and told them to give green beads and diamonds, and said to them through signs that they should bring gold for exchange and that he would give them of the things we had for exchange, and they brought jewelry of low grade gold, and he gave them beads for this. And also those from Guazacalco (Coatzacoálcos) came, and from other towns around and they brought their jewelry, which was not very much, because in addition to this exchange all the Indians of these provinces usually brought some hatchets of copper, very brightly polished for refinements or adornment with handles of painted wood, and we thought they were of low grade gold. We commenced to trade for these, and I tell you that in three days we got more than six hundred, and we were very content believing them to be of low grade gold, and the Indians still more with their beads, and we all came out empty handed for the hatchets were of pure copper and the beads a little or nothing. And one sailor had bought seven hatchets, and was happy about this, and I also remember that one soldier by name of Bartolomé Pardo went to a house of idols which was on a hill, and of which it is already said that they are called Cues, which is as much as to say House of One's God, and in that house he found many idols and much copal, which is like a rosin with which they fumigate (the idols), and knives of flint with which they sacrificed and circumcized, and in a chest of wood he found many bits of gold which were diadems and collars, and two idols and others as cast beads, and the soldier took the gold for himself, and

the idols and the other objects of sacrifice he brought for the Captain, and it did not miss that somebody saw this and told it to Grijalva, and he wanted to take it, and we prayed him not to do this, and as he was in good humor he ordered that the Royal fifth should be taken and the rest was given to the poor soldier and it had the value of 150 pesos.

"And I also want to tell how I planted some seeds of an orange next to another idol house, and this happened in this way: Because as there were many mosquitoes in that river, ten of us soldiers went to sleep in one of the tall idol houses, and next to this house I planted the seeds which I had brought from Cuba because it had been told us that we were going out to settle, and they grew very well because the priests of those idols cultivated them and watered them and cleaned them as soon as they noted that they were plants different from their own, and from these came all the oranges of that province . . ."*

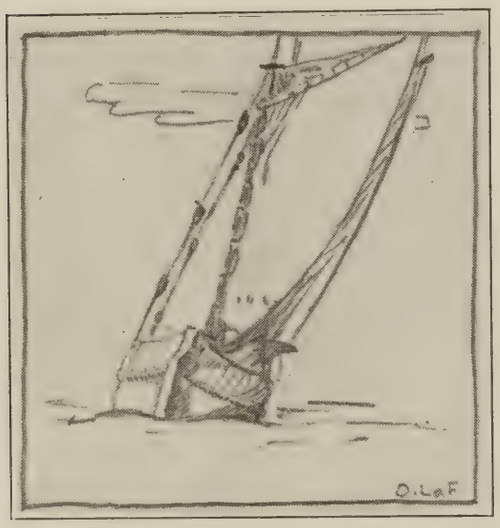


Fig. 64—Sailing Vessel on the Gulf Coast.

In this narrative are several points that interest us. First, the ruins, described as located about one league from the mouth of the river, were undoubtedly those which we were in search of; secondly, the small tale of the planting of the orange seeds. Here is then the place where the first oranges were planted on the American continent (and not in California).

We anchored near the settlement for a time and went ashore to procure guides and food. The guides told us of two ways by which to reach the stone monuments reported at the ruins. The one was by a dugout over the river and then following a small stream, a little more than a league from the Tonalá river. The other lay up the Tonalá river and then in through a tributary, the Blasillo river. This last route would give us a shorter distance to walk and to carry our equipment, so we decided on it.

With our motor going and the sail stretched out to protect us from the sun, we then proceeded up the Tonalá river. This river has several names. At the mouth it is called Tonalá, further up from the tributary Zanapa, to a place called Buena Vista, its name is Tancochapa, and from this last place it splits into two rivers, the Rio de las Playas, which runs nearly due south, and the Pedregal,

*Diaz, Bernal, Garcia Edition, 1904. Page 46-47.

which runs more to the southeast, and together with the Tancochapa and the Tonalá forms the boundary between the States of Veracruz and Tabasco. The two rivers above the place where they join are swift and narrow with many small rapids, but along its lower reaches, the river is slow and deep.

The section we followed was broad, and the banks were covered by a thick growth of mangrove. Here and there white herons would be frightened up by the noise of the motor and fly along the river in front of us. After two hours and a half we reached the mouth of the narrower Blasillo river and turned into it (fig. 65). We had to progress with care as snags were plentiful. In some places huge

FIG. 65—Rio Blasillo, Tab. The Sloop Lupata chartered by the Expedition.

trees had fallen into the river and nearly stopped our advance. At last towards evening we reached a small Indian ranch called Blasillo, where we remained for the night.

One of the first things we did was to hang up our hammocks and mosquito nets. The place was infested with these bloodthirsty insects, and when we went to rest we heard millions of them sing woeful serenades outside our nets.

We were up before dawn, and after a meal set out for the ruins. Leaving the river, we had to cross low ground, so low in some places that we had to wade along in water above our knees. Our guide told us that La Venta was an island entirely surrounded by swamps,

the island itself being covered with low hills, with soil excellent for growing all kinds of plants. The land is divided into lots, each lot belonging to one Indian family.

As we neared La Venta we met several Indians on their way to their corn fields or going hunting. We stopped them and persuaded them to help us as guides, and to clear the thick growth which we were sure would cover the monuments.

After an hour's brisk walking from Blasillo, we at last turned off from the trail and stood in front of the first idol. This was a huge stone block, 2.25 meters high, 86 c.m. broad, and 72 c.m. thick. It had fallen on its back and showed us a human figure carved crudely in deep relief, the deepest carving being 14 c.m. (fig. 67).

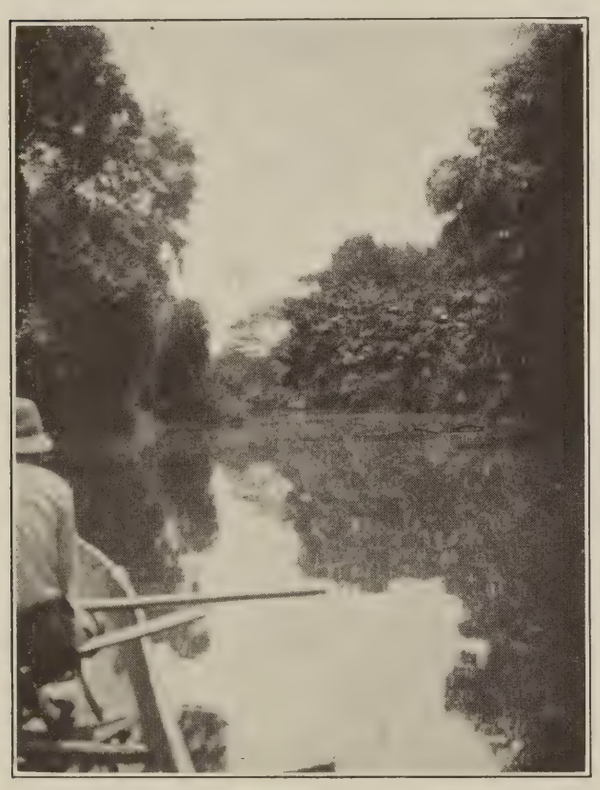


Fig. 66—Rio Blasillo, Tab. View of the River.

Our jack was not strong enough to swing this huge block, so we could not see if it had carving or inscriptions on its back. There is no distinct style to this figure, though its general appearance may be said to give an impression of a slight Maya contact.

Close by, in a northwest direction, we saw a long row of stones like small pillars, averaging 80 c.m. high with tops broken off, set in the ground in a row and close together, forming something like a fence (fig. 68), and in the center of these to the east, a huge block, probably an altar (Altar 1), rough on the under side and with figures engraved on the smooth upper surface. This altar is approximately circular, between 1.5 and 2.0 meters in diameter, and has rolled over so that it stands at an angle where it is impossible to get a good photograph of it. Moreover, the Indians have had corn fields here, and after cutting the bush they burned it off, thereby badly damaging the stone by heat. There was no hope of turning it without a large gang of workmen and some ropes, so we had to content ourselves with making some drawings of the best preserved of the figures engraved on the surface.

From this monument we went back over the trail to a pyramid about 25 meters high, which was facing south. There was no sign of a structure on its top, and if Bernal Diaz really was at this place, the idol house he slept in must have been a palm-roofed building possibly with adobe walls.

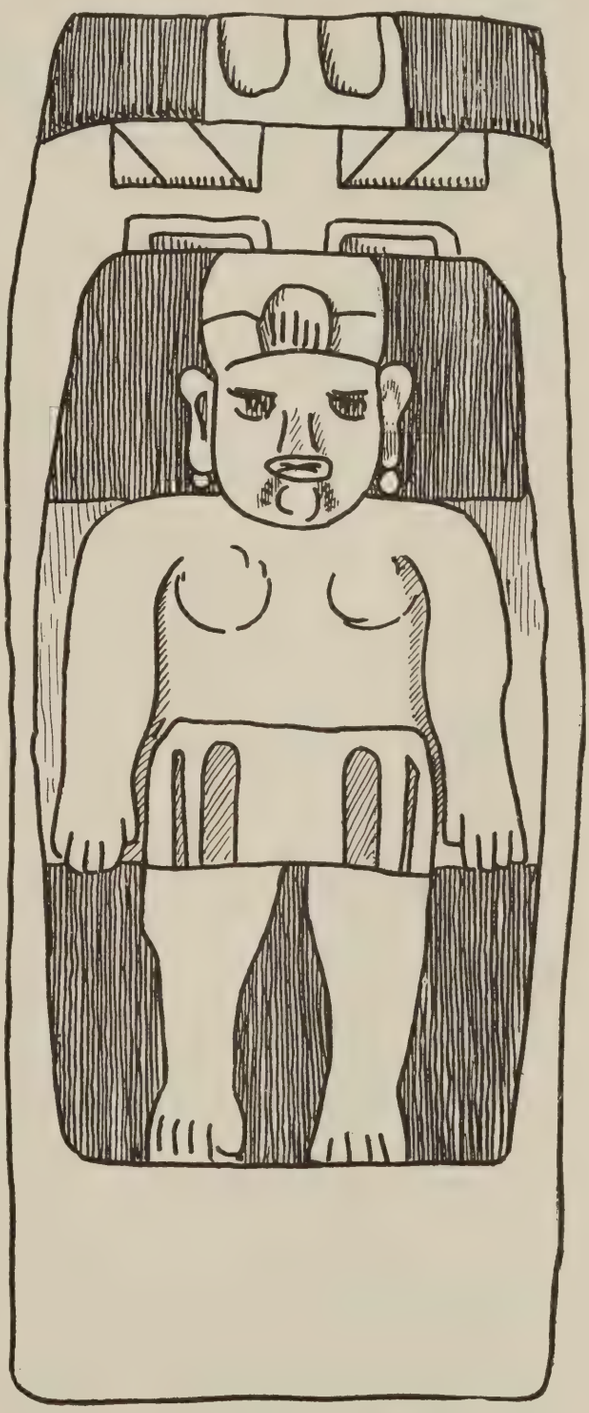


Fig. 67—La Venta, Tab. Stela No. 1.

The next monument found by our guides we named Stela 2 (fig. 69). This was a large monolith, 3.20 meters high and 2.00 meters broad. Fortunately, it also lay on its back, showing us a standing human figure with a large head-dress and holding a ceremonial bar diagonally across its breast (figs. 70-71). It is a full face figure, carved on the somewhat rough surface of the stone, standing out boldly against a set of three smaller figures on either side. These are carved in low relief following the irregularities of the stone. They turn their knees towards the main figure, heads away, and also hold staffs in their hands (fig. 72).

There is no doubt that this figure is strongly influenced by Maya art, if it is not really Maya. The ruins of Comalcalco, the nearest Maya city previously reported, lies 100 kilometers to the east. The crudity of some of the La Venta figures must undoubtedly be ascribed to the hardness of the material in which the carving was done. All the monuments at La Venta are of igneous rock and are all of great size. Inquiring of the oil geologists who work for the Cia. Mex. de Petroleo El Aguila, we were told by one of these, Mr. N. F. Keller, that rock of this kind could not be quarried nearer than 100 kilometers up the river at a place called La Laja. At Paraje

Solo, on the trail between the Nahua speaking village of Molocan and Rivera del Carmen, is an igneous outcrop, and another geologist of the same company, Mr. S. W. Lesniak, reports an idol at that place.

Here again we stand before one of the amazing riddles of ancient engineering. How did the Indians transport these large blocks of stone over a distance of more than 100 kilometers, across swampy ground or along the rivers?

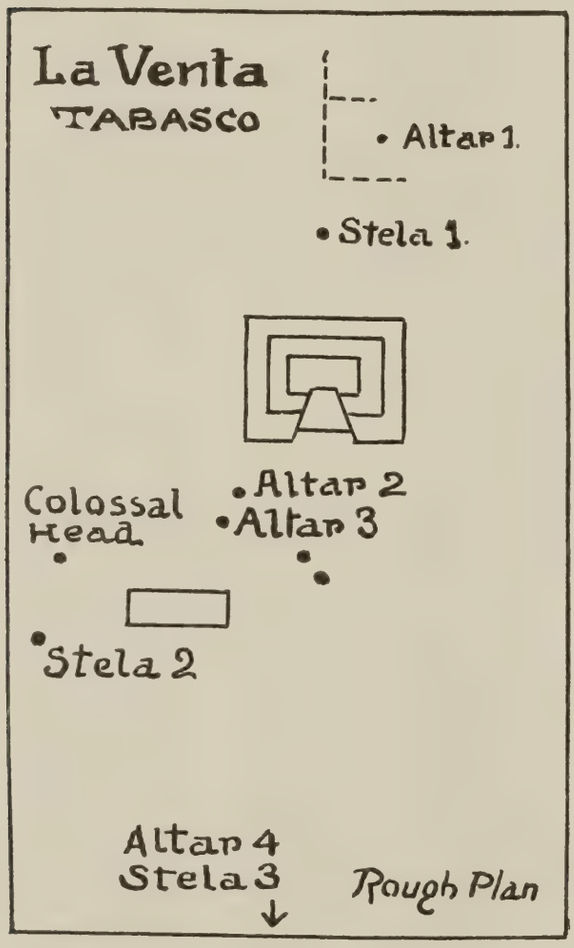


FIG. 68—La Venta, Tab. Rough Plan of the Ruins.

We had bad luck at La Venta—one whole pack of film, the one containing our photographs of the most interesting monument, Stela 2, turned out totally blank, so we can only present some of our drawings of this monument.

After having worked Stela 2, monuments appeared in rapid succession. Altar 2 is located at the foot of the pyramid, to the south. It lies with face up, and on it is carved a crude figure sitting in a niche with legs cross Turkish fashion (fig. 73).

Altar 3 is a square block standing close by, carved so that it gives the appearance of having a cushion on its top. On its north side, i. e., facing the pyramid, is a deeply carved niche in which a figure is sitting bent forward with legs crossed. To the left of the niche is a panel on which a standing figure in low relief is engraved (fig. 74). A similar panel was probably also on the right side, but this side of the altar has been damaged. The southern side of the altar is plain, but on the western side two sitting figures are seen engraved (fig. 75). They face each other and appear to be in some kind of dispute. We had to dig a little in front of this altar in order to get a photograph.

After this we came to the most amazing monument of them all —a huge bell-shaped boulder. At first it puzzled us very much, but

after a little digging, to our amazement, we saw that what we had in front of us was the upper part of a *colossal head.* It had sunk deep into the soft ground, and it was out of the question to expose it (fig. 76).

The visible part of the head measures 6 meters in circumference, and protrudes 1.35 meters from the ground. In the lower right hand corner of the photograph which we made of this monument one

Fig. 69—La Venta, Tab. Stela No. 2.

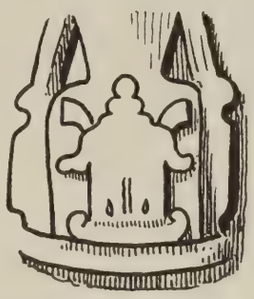


Fig. 71—La Venta, Tab. From head-dress of main figure Stela No. 2.

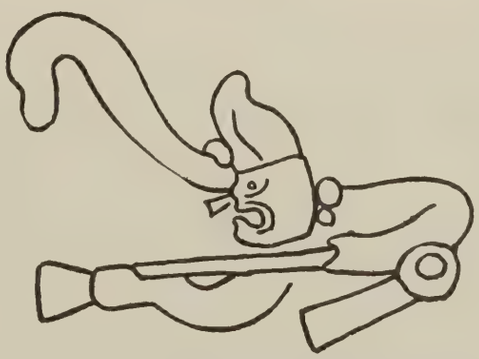


Fig. 72—La Venta, Tab. Small figure on Stela No. 2.

Fig. 70—La Venta, Tab. Detail of main figure Stela No. 2.

sees the left eye of the head. The colossal head reminds one of the one found by the Selers between Los Lirios and Tres Zapotes in the Canton of the Tuxtlas. La Venta is certainly a place of many puzzles, and further work should be done there in order to ascertain more definitely where this ancient city should be placed in our sequence of cultures.*

*Seler, C., 1922. Plate VI.

On our way to the next monument we stopped by an Indian hut to get something to eat. We were received in a friendly manner by an old Indian woman dressed in a white cloth wound around her waist. Long flabby breasts were hanging down beneath her belt line, and flowers were in her hair. Another woman with a face like that of a horse apparently was overcome with shyness, and rushed out to get a chemise with which to cover herself. But the loveliest member of the family, a young girl of about 15 years of age, appeared in the doorway in all her golden brown glory, plus a white cloth around her waist, and some red flowers in her hair. She was beautifully built, with laughing eyes, and the most exquisitely shaped breasts.

Fig. 73—La Venta, Tab. Altar No. 2.

We stayed for lunch, enjoying a dish of black beans, tortillas and coffee, as well as occasional glimpses of the young Venus walking to and fro inside the hut, now and then stealing up to the door to get a look at the strangers outside.

The old lady told us that her father came to this place from Jaltipán, on the Tehuantepec railway, and that all the inhabitants around La Venta speak Mexicano, i. e., Nahua. This settlement is

Fig. 74—La Venta, Tab. Altar No. 3.

undoubtedly recent, as are also the Nahua settlements at Moloacán, Ixhuatlán, and Chichigápa, all on the Coatzacoalcos and its tributary, the Uspanapa.

FIG. 75—La Venta, Tab. Incised drawing on side of Altar No. 3.

After our meal the guides brought us to a lot of land owned by an Indian, Leopoldo Sarabia, and here showed us another huge altar. This, Altar 4, was a large square block of stone, 3.15 meters long along the top, 1.90 meters deep, and with about 1.5 meters exposed above the ground. We calculated the mass of this block to be at least 9 cubic meters. On its north side is an incised ornament along the upper rim of the table, and under this is a deep niche in which sits a human figure, legs crossed Turkish fashion. The front of the altar had sunken into the ground, and only with some difficulty were we able to expose enough of the ornament to get a fairly good photograph of the figure (figs. 77-78).

There is a strong Maya feeling about this monument. The person in the niche resembles figures on Stela E at Piedras Negras, and the design above the figure undoubtedly represents a conventionalized animal's head.

FIG. 76—La Venta, Tab. Colossal Head.

Fig 77—La Venta, Tab. Altar No. 4.

Fig. 78—La Venta, Tab. Altar No. 4.

For many years two large stone monuments have stood in the yard of the Instituto Juarez, a school in Villahermosa, the capital of the State of Tabasco. Reports differed as to where they had come from. Some people said that they came from Blasillo, others that they came from La Venta. We were able to get the history of these monuments and to ascribe them definitely to the ruins of La Venta. About twenty years ago Don Policarpo Valenzuela, of the well-known Tabasco family, had a concession for cutting lumber in the territory along the Tonalá river. He found these monuments and removed them from La Venta to Blasillo on the river with the help of the oxen he was using in hauling lumber. We were told that he had likewise tried to remove Altar 4, for which purpose he had dug a trench in front of the monument, but found it too heavy. He was unable to haul away the altar, and it sank down into the trench. The idols now found in Villahermosa are carved out of fine-grained sand stone just as the majority of the other idols of La Venta. The larger of these represents a sitting figure resting his hands on his feet. The smaller of the two has four faces, and is badly weathered. These two figures we have numbered Idols No. 1 and 2, number 1 being the larger (figs. 79-80).

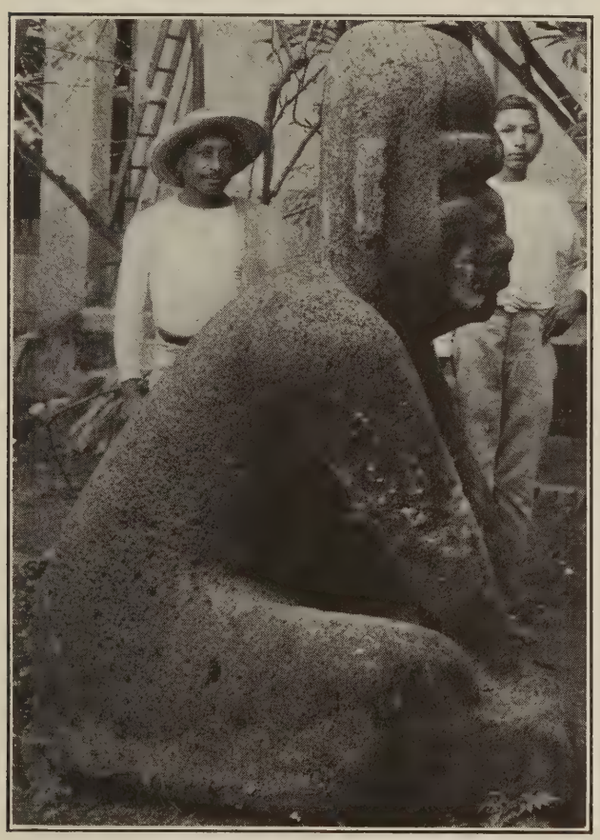


Fig. 79—La Venta, Tab. Large Idol, now in Villahermosa.

The last monument shown us was a sand stone block, 2.10 meters broad, 3.70 meters long, and 1.30 meters thick, lying on the side of a small hill. It may have fallen face down, and as we were not equipped to turn such a huge block of stone we could not see whether it had carvings on its under side. On the back of the stone are some incisions made in recent days with steel tools. The Indians told us that they had tried to break it to see what was inside it, as they often had seen smoke rising from the stone. I think this smoke can be explained by the fact that the sandstone is porous and soaks up water when it rains, and when heated by the

sun, the evaporation would look like smoke. This monument measures at least ten cubic meters.

One more monument was reported by the Indians, but as it was said to be far away, and as we were anxious to get back to Puerto Mexico in order not to miss our boat, we did not see this.

It might be well to summarize the discoveries at La Venta. We have here a collection of huge stone monuments, and at least one large pyramid. Some features of these monuments are similar to things seen by us in the Tuxtla region; other features are under strong influence of the Maya culture to the east. The Maya features in Stela 2, the standing figure with diagonal ceremonial bar and huge head-dress, and in Altars 3 and 4, are so strong that we are inclined to ascribe these ruins to the Maya culture.

Fig. 80—La Venta, Tab. Two Idols now in Villahermosa.

Upon our return to Blasillo our boatman had a good meal ready for us, and as soon as it had been consumed we started downstream towards Tonalá. The ebb and flood is very noticeable in these rivers during the dry season, and salt water runs far inland during flood tide. The Indians always take into consideration the ebb and flow when they travel on the rivers in their dugouts.

It was after dark when we reached Tonalá and went ashore to sleep in one of the Indian houses, and early the next morning we returned to Puerto Mexico.

Several times the steamer for Frontera was reported delayed and when it finally arrived we were more than eager to leave.

We had the choice of two boats for leaving Puerto Mexico, either the National steamer, "Jalisco," on which Mr. Gates and his party were to arrive, or a large twin screw motor boat "Reina" belonging to the Aguila Oil Company. The "Jalisco" plies up and down the coast, and does not enter the port of Frontera, but anchors outside the mouth of the river. This means that equipment has to be un-

loaded into barges and brought into Frontera by that means. The "Reina," on the other hand, was scheduled to go direct to the wharf of Frontera and from there up the Grijalva river to Villahermosa, for which place we were bound. We, therefore, chose the latter for our trip.

Mr. Gates and his party arrived in due course and brought us mail from home, and the following evening the "Jalisco" and the "Reina" left Puerto Mexico, both of them carrying Tulane scientists.

The "Reina" is a big tub with a heavy mast set right in the middle of the boat and a tremendous cabin and bridge tacked on clear aft. The crew consisted of twelve Mexicans and the passengers, two geologists of the Aguila Oil Company, Messrs. Campbell and Reed, the two Tulane men, a Mexican Government oil inspector and his huge revolver, and a family, or rather a litter, of Mexicans consisting of a man, cheerfully drunk, who spent his day spitting on the deck, and smoking cigars as near the gasoline cargo as he could get, a woman lying on the deck groaning with seasickness, and a half dozen kids who took turns in howling at the top of their voices.

We strung our hammocks on the boom, and the Mexican family camped right below us. It was an unattractive lot to look upon from our lofty position, and we could hardly get out of our hammocks without stepping on at least one of the youngsters.

About dawn we had a cup of coffee to drink, and a coffee cup full of water to wash ourselves in, whereafter we returned to our hammocks. During the early morning we made good headway towards the east, with the low sand dunes of the coast in sight all the time, but suddenly the boat started to travel around in figure-eights and circles, as if the captain had gone mad and were chasing porpoises. At first nobody knew what was the matter, but eventually it was discovered that we had only lost our rudder. For a short time the captain tried to sail without it, but at last he gave this up and issued orders to anchor in sight of the Tupilco lighthouse.

Tupilco is probably the place Cortes mentions in his fifth letter to Charles V. He describes the crossing of a river at Cupilco, and this is probably identical with this place.*

The captain sent two men ashore, ordering them to try to get through to El Paraiso and from there to communicate with Puerto Mexico and instruct the oil company to send out a tug boat to rescue us.

*Cortes, MacNutt Edition. Vol. II., Page 284.

All day long we watched the coast to see if our messengers were coming back. Darkness fell, and then we saw some lights on the shore, but after some discussion it was decided not to send in our boats, as those signalling might be bandits. At dawn the next morning we finally saw a large fire, and the boat was sent in, bringing back our two messengers. They had gone to the lighthouse on foot and from there in canoes to Paraiso. In this place they stayed for an hour, sending off telegrams and getting a little food, whereupon they immediately returned. They were not the people who had lighted the fire the previous evening.

By noon the crew had rigged up a new rudder made out of a pipe and some boards, and, steering with this, we again started on our way to Frontera. The rudder worked quite well, but progress was slow. Fortunately for us the sea was quiet, as in case of a storm we would undoubtedly have been swept up on the coast.

Several times we sailed through large schools of porpoises, and once we saw a shark chasing a big fish. It was a great battle, the shark churning the sea and spinning around, the fish sometimes jumping clear out of the water across the shark. We did not linger to see how the struggle ended.

Towards dark a wind began to blow, the waves were crested with white, and as night fell the water was shining with a bluish green phosphorescence. It was very beautiful and strange. The moon rose fiery red, and everybody was on constant lookout for the low coast, as for a long time we could not see the lighthouse of Frontera. At last it came in sight and at about 10:00 p. m. we anchored, as it would be too dangerous to try to enter the river at night.

The following morning we had to wait a long time for the pilot boat to come out, and when it arrived, it was only a small launch. They tried to tow us, but did more damage than good, and finally left us to zig-zag our own way up the river to the town.

Frontera is the only port of the rich State of Tabasco. Formerly it had a large trade in the agricultural products of the State. Its main exports were cattle, cocoa, coffee, bananas, and mahogany and cedar wood. As the State is rich, it has been a "happy hunting ground" for rebels and bandits.

The town is more attractive than Puerto Mexico, having many red tiled brick houses, and a pretty park. Today its trade is small. A few mahogany companies still receive rafts of logs which come drifting down the river from Chiapas, and an oil company has its headquarters here, but the banana companies have all withdrawn, partly due to the uncertain conditions as to delivery of fruit, and partly to the rulings of the labor government of the State.

Part of The State of

TABASCO

MEXICO

Gulf of Mexico

Tupilo Light

Dos Bocas

Frontera

Atasta

Xicalango

Carmen

Laguna de Terminos

Bellota

El Coco

Paraiso

Comalcalco

Jalpa

Nacajuca

Tonala

La Venta

Blasillo

Rio Blasillo

Cardenas

Villa Hermosa

Tonchochapa

Huimanquillo

Rio Pedregal

Rio Playas

Pichucalco

Mono Pelado

S. Fernando

S. Carlos

Macuspana

Jalapa

Tortuguero

Tacotalpa

Teapa

Zapoteave

Salto de Agua

Iowa

El Retiro

Palenque

Palenque Ruins

Sulusum

Xupa

Reforma

Monte Cristo

Catazaja

Chacaba

Chable

Tacolpen

Porbicue

Balancan

Monula

Chapter V

THE MAYA COUNTRY

The first point on the American mainland to be reached by Europeans was Cape Catoche in northern Yucatan. The first Indian tribe met by the Europeans on the mainland was the *Maya.* For many years this courageous tribe waged a fierce fight against the strangers. The Spaniards were in quest chiefly of loot, and as the Mayas gave them much trouble, and little gold was found in their country, they centered their energies upon the highlands of Mexico where gold was plentiful. Moreover, the Maya civilization was in decay, and the Aztec civilization at its zenith at the time of the Conquerors. Much was written home to Spain about the latter, and very little about the former. It is only during the last fifty years that scientists have begun to realize that the Maya race produced the highest civilization of the American continent, and only very recently has the world taken an interest in this ancient civilization.

The "Maya area," as we now style it, lies between 87° and 95° west longitude and 15° and 22° north latitude. Roughly, it may be said to extend from the Isthmus of Tehuantepec on the west to the northwest part of Spanish Honduras on the east. To the north it is bounded by the Mexican Gulf and the Caribbean Sea, and to the south by the Sierra Madre Mountains.

The present-day geographical division is the States of Tabasco, Chiapas, Campeche, Yucatan, and Quintana Roo of the Republic of Mexico, British Honduras, the greater part of the Republic of Guatemala, and the northeastern fringe of the Republic of Honduras.

Linguistically, this area is inhabited by peoples who speak Mayance dialects up to this day. Only one outlying zone of Maya language exists—the Huasteca, living along the Panuco River in the northern part of the State of Veracruz.

By the hand of nature the area has been divided into two sections, and strangely enough these sections correspond to the two major divisions of Maya history. As we now stand in our knowledge of this history, we divide it into two periods, the Old and the New Empires. Roughly, a line drawn from the Laguna de Términos on the Gulf Coast to Chetumal Bay on the Caribbean, marks the division. What lies south of this line pertains to the Old Empire, and what lies north to the New Empire.

The greater part of the area in which the Old Empire culture developed is, but for the plains of Tabasco and the lowlands of Petén, a mountain region. The landscape is broken by limestone ranges, intersected by broad valleys. The general trend of the mountains is from northwest to southeast, following the line of the main geological fault. When studying the maps of the region one will see that in Tabasco, Chiapas, and the highlands of Guatemala there are many rivers. In the Petén, on the other hand, rivers are scarce, the ancient cities generally being located beside aguadas, or water holes.

Geologically, the State of Tabasco is quaternary, but as soon as the mountain ranges are reached, one gets into tertiary limestone which continues until the Sierra Madre is reached, close to the Pacific coast.

In the New Empire region, i. e., on the peninsula of Yucatan, conditions are different. The limestone underlying this area is young (quaternary) and very porous, so we do not find any rivers. The vegetation is chiefly of bush character. The ancient settlers were forced to build their cities by water holes or caves containing water, as, for example, the Cenotes at Chichén Itzá, or the caves of Bolonchén.

Up to the present day, the inhabitants of the whole of this area speak languages of Maya stock, as already stated.

In most archaeological fields one is able to follow the development of culture from a very primitive stage. The deeper one digs, the more primitive are the objects found. This is called archaeological stratification. By a careful study of such stratification the archaeologist is able to follow the gradual development of the ancient inhabitants of one particular place, and to estimate the approximate age of the objects found. Such stratifications are well known, for example, in Egypt and in the Mexican Valley. But no such stratification has as yet been found in the Maya country. In most parts of the area bed rock is reached after a few feet of digging; only objects from the fully developed culture period, but hardly any primitive objects have been found. The question arises: Where did the Maya race come from?

By the way of answer, a multitude of theories have been launched, most of them based on superficial resemblances between Maya objects and the products of cultures from other parts of the world.

Some maintain that the Mayas came from Egypt, or even are descendents of African races; some place the cradle of the Mayas on the lost continent of Atlantis; and others say that they arrived from Asia on elephants with their culture fully developed.

The theory of an Asiatic origin is probably nearest to the truth, but the tribes who migrated from Asia left that continent at a very low stage of development. They drifted slowly down to the North American continent into Central America. In the rich Central American highlands and valleys they cultivated maize, or corn, built up a culture, and constructed mounds. From this centre the culture spread—returned north, and also extended towards the south, carrying the corn culture along with it.

Many things indicate that the Maya culture was indigenous to Central America, but they cannot be discussed in this short description. Only this much can be stated—that when we first meet the Maya, i. e., when the monuments were executed which carry the oldest dates, they already had a fully developed system of writing, and were experts in handling numerals, chiefly for the purpose of astronomical calculations. We find them at full cultural swing just around the time of the birth of Christ. They carved hieroglyphs on stone, built temples of cut limestone blocks and mortar, and arranged them around squares oriented to the cardinal points.

We have already spoken of the Tuxtla statuette as having the oldest date on record on the American Continent (98 B. C.) The next is the Leyden Plate dated 8-14-3-1-12 1 Eb 0 Yaxkin (60 A. D.) Both these objects are light of weight and carved in jadite.

The oldest large standing monument is in Uaxactun, Department of Petén, Guatemala, where Stela No. 9 records the year 68 A. D.*

These dates are intriguing. The Tuxtla statuette was found outside the western limits of the Maya area, the Leyden plate near its eastern boundaries, and Stela 9 from Uaxactún stands in a ruined city in the center of the area in which the Old Empire flourished. Around this latter place are a series of monuments on which are engraved very early dates, and it is therefore likely that the Maya culture had its first growth in the heart of what is now the big forests of the Department of Petén.†

Our sources of information of the history and activities of the ancient Maya can be divided into the following groups: ancient manuscripts and inscriptions on stone written in Maya hieroglyphs; historical records written in the Maya language but with Spanish characters; descriptions written in the Spanish language by people who arrived in the Maya country shortly after the Conquerors; and finally, archaeological and ethnological data collected by modern explorers among the Maya speaking people.

*Discovered by Dr. S. G. Morley of the Carnegie Institution of Washington.
†Morley, 1925.

Under the first of these headings fall a vast number of hieroglyphic inscriptions on stone, wood, shell, and bone, as well as three hieroglyphic manuscripts written on paper made of ficus tree bark covered with a fine surface of chalk. These three manuscripts, the Dresden codex, the Tro-Cortesianus codex, and the Perez codex are preserved in European libraries.

The deciphering of the hieroglyphs is advancing rapidly. Thirty years ago little was known as to what they contained. Now everything relating to the astronomical calculations of the sun, i. e., the Solar Calendar, can be read. We know that the monuments contain dates and astronomical calculations, and it is believed that they furthermore contain some historical data. The manuscripts more justly may be called books of astrology combined with astronomical tables.

To the second group belong the books of Chilan Balam, the Popol Vuh, and the Anals of the Cakchiquels, written by Indians who had learned to use the Spanish characters shortly after the Conquest.

The Conquerors themselves were more occupied with wielding the sword than the pen, so it fell to the clergy to write the first records about the Mayas. Foremost among the sources of the history of the Mayas stands the "Relaciones de las Cosas de Yucatan," by Bishop Landa, closely followed by books of Cogolludo, Lizana, Remesal, Nuñez de la Vega, and others. Most of what we know regarding the religion and customs of the ancient Maya we draw from these sources.

Under the last heading comes a multitude of explorations done in the various fields of Maya research in recent times, such as studies of language and dialects, and records of the daily life, the superstitions and beliefs of the now living Mayance Indians, as well as explorations of the ruined cities.

The greater part of the Mayance Indians of today are officially Catholic, but when living among them one soon discovers that they really lead, so to say, an archaeological life. They worship the Catholic Saints with pagan ceremonies. They live much as their forefathers, and have adopted exceedingly few modern facilities, of which the most important is the machete, or steel bush knife.

Turning to the history of the Mayas, we soon see that the written sources begin with purely mythological data, and do not reach historical ground before the period when the Mayas founded a colony at Bacalar, in the southern part of the peninsula at Yucatan. This means that we have no history connected with the Old Empire region, the region where we find such great quantities of ruined cities. We must, therefore, reconstruct the history of the Old Em-

pire on the basis of our knowledge of the New Empire, helped by a study of the architecture and art expressed in the Old Empire cities, as well as of the life now led by the Indians of Maya descent.

Today huge tropical forests cover the greater part of the country in which the Maya culture was developing towards its first great period two thousand years ago. The oldest cities, Uaxactún and Tikal, lie in the heart of the jungle. There the large public squares between the buildings are covered with impenetrable bush; the pyramids lie hidden under a carpet of trees and vines; and the roots of big trees are penetrating the walls of the temples, day by day completing their destruction.

Disembarking in Frontera, we stepped on Maya soil. From this point onward, we were going to explore the area inhabited by the ancient Maya race; so we again halted a few days to finish our notes on the country which we had passed over, and to freshen up our knowledge of the country and people which we were about to study.

Entering the mouth of the Grijalva river we again reached historic ground. It was, as a matter of fact, the ground touched by the first European Conquerors on their first voyage. In 1518 Grijalva discovered this river, trading with the Indians along its banks and giving them glass beads for gold. Again in 1519 the Cortes expedition entered the river. Only one of the three ships of this expedition could cross the bar. Upon entering the river, the Spaniards found it full of Indian canoes crowded with great numbers of armed men. At first the relations between Indians and Spaniards were friendly; but it was not long before war broke out. Several battles were fought, and here for the first time horses were used on the American Continent. Both horses and firearms were new to the aborigines and threw them into consternation, leaving victory with the small troop of Spaniards.

The main battle was fought at Centla, and several investigations have been made to locate this place. The general supposition is that it was at the place now called Bellota, across the river from the modern Frontera.

Just opposite Frontera is the ranch El Coco, formerly owned by Americans who made excavations of several ancient Indian mounds. From this ranch there is said to be a long string of mounds extending as far as the Laguna del Remate.

The first modern explorer to visit the ruins of Centla was Berendt, whose notes were published by Brinton. Charnay saw some ruins near Bellota, and tells us that burnt brick was used there

in the construction of temples on the top of mounds. He also pictures a stucco relief. Finally, Seler visited the ruins and published some photographs of mounds.

The Tulane Expedition did not go to Centla, but as we later explored the ruins at Comalcalco and found them to be constructed of burnt brick and to have stucco reliefs on their walls, it is well to make note here of the similarity of the mounds at Bellota and those of Comalcalco.

In Frontera we paid a visit to the Forestry Inspector, the engineer, Mr. Fraire, who has made a detailed study of the vegetation of the Tabasco coast. He has travelled much in the region, and as he is a man of many interests he has also made a small collection of antiquities. Among the objects he was kind enough to show us were two copper bells, all that were left of eight found near Sotavento Chico, by Carmen, in the vicinity of the Bellota ruins. This checks well with the reports of the Conquerors that there were many copper implements among the Tabasco Indians. This copper must have come into the region through trade with Toltec or Nahua traders, as no copper is found in the alluvial plains of Tabasco. Accordingly these objects must be of late date, since we know as a fact that the Old Empire Maya did not possess this metal.

A feature of importance mentioned by Berendt is that the mounds are covered by a layer of stucco, making the earth works appear to be of stone.*

Cortes' party brought with it several interpreters, among whom Geronimo de Aguilar† was foremost. He was able to speak to the Indians of Tabasco in the language he had learnt during his stay as a prisoner amongst the Mayas of Yucatan. There is, therefore, no doubt that we here have true Maya Indians, and that at Frontera we had reached the Old Maya territory.

It was also here that Cortes received the Indian girl, Malinche, later Doña Marina, as a gift from the chief of the country, one Tabzcoob (or Tabasco) from whom the whole province later was named.

In the Fraire collection were some specially fine specimens of clay figurines from the banks of the Usumacinta river (fig. 81). From Tenosique, where this river comes out of the Chiapas limestone mountains and winds its ways through alluvial plains to Frontera, the high water of the rainy season each year washes a multitude of clay objects out of its banks. These objects are gathered by

*Diaz, Bernal. Edition 1632, Page 8—Charnay, 1880. English Translation, 1888, Page 187, ff—Berendt, 1869, Published by Brinton, 1896—Seler, E., 1904. Vol. V., Page 149.

†Regarding Geronimo de Aguilar, see S. K. Lothrop, "The Ruins of Tulum." Carnegie Inst., 1924.

the Indians and offered for sale. Mr. Fraire had collected several good examples, of which we shall reproduce only a few. One is a small clay head of a man, exquisitely modeled, and showing artificial flattening of the forehead and tatooing around the corners of the mouth. This artificial flattening of the forehead is typical in the figures represented in stucco on the walls of the temples at Palenque. The tatooing has as yet not been noted there, but is nearly always seen on clay figurines from the mounds at the town Jonuta, on the lower Usumacinta river.

Fig. 81—Frontera, Tab. Maya Clay Head from Las Cruses on the Usumacinta River.

This gives an opportunity to say a few words about the mounds at Jonuta. Where the two branches of the Usumacinta river meet there are several mounds, one of which is quite large. This large mound lies so that it has a dominant view of both arms of the river. From its foot the town of Jonuta extends downstream. Constant excavations for streets and house foundations there have brought to light a large amount of pottery figurines. These all show a skillfull modeling, and all are of distinct Old Empire type. When the writer passed through Jonuta several years ago, he was so fortunate as to secure a few of them (fig. 82). They are generally in the form of hollow whistles with a mouthpiece and from one to five holes for notes. The figure most commonly represented is an owl-like animal, but human figures are also frequent.

It should be noted that the figurines found along the Usumacinta and down to a short distance from the coast are all typically Old Empire. Then just along the coast appear a series of figurines either of a type similar to those found on the east coast of Yucatan, such as one in the Fraire collection, or like an incense bowl belonging to Captain Stout of Frontera, which is extraordinarily like the

bowls made by the present-day Lacandon Indians in the heart of the Chiapas forests. Captain Stout told the writer that this bowl had been found together with a similar, though somewhat smaller, bowl in a mound quite close to the coast west of Frontera.

In the outskirts of the town of Frontera to the east are a few ancient mounds. The Tulane Expedition visited and studied them, but as we did not dig into them, they rendered little information. The only thing of interest were some fragments of a stucco floor, found by the side of an excavation made for the placing of a telephone post. The material of this floor was identical with the floors in other Maya mounds. Upstream on the right bank of the river, in the southern end of the town, at a place called Pravia, are some more mounds. We only place on record the fact of their existence, as we did not visit them.

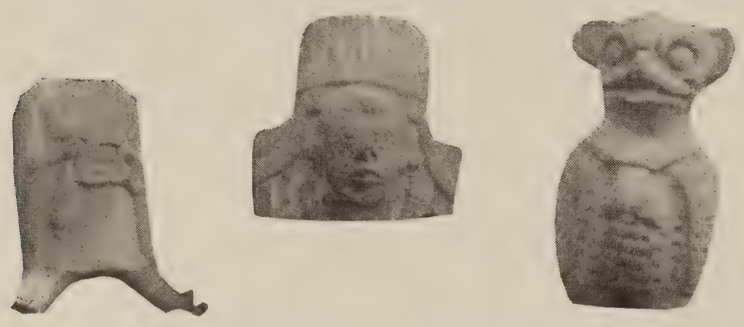


Fig. 82—Jonuta, Tab. Maya Clay Figurine.

While staying in Frontera we were assisted in many ways by both the American Consul, Mr. Ott, and the chief and staff of the International Oil Company. Several delightful hours were spent with these American gentlemen, and they furnished us with much valuable information. Here it was, for example, that we learned from the company's land agent, Mr. Young, about the document relating to Doña Marina's property at Jaltipán on the Isthmus, and it was here that the company's engineers and surveyors placed maps and observations at our disposal. It was a great help to us to check our own information as to the magnetic declination for the area with the observations made by the men of the International in their different oil camps.

The usual small game of trying to overcharge us was played by the local stevedores. The "best" local hotel was found to be just fit for pigs. We found quarters in a small house on a grass covered street, and deeply enjoyed a change in our diet of black beans by partaking of the meals at the International's mess.

On the Tabasco rivers are many kinds of transportation, varying from native canoes to stern wheelers and fast oil company launches. The first boat out of town was a barge with gasoline motor, a flat bottomed boat with a two story cabin. Though we had a cabin to ourselves, it was so stuffy that we preferred to rig our hammocks up on deck. At nightfall we left Frontera, and as

we labored up against the current, we passed the launch of the Governor of the State of Tabasco, Tomas Garrido. It looked like a moving circus. On the roof of the cabin was an orchestra, and tied to the railing along the stern was a flock of turkeys and chickens. A bunch of heavily armed Lazzaroni formed the guard for this most powerful man.

Long before dawn we were chased out of our hammocks by a heavy shower, and thereafter huddled together under our rubber ponchos with our backs against the wall of the cabin. We tried to sleep, but did not have much success. Daylight came, and with that, some food. Then the sun broke through the clouds and dried us out.

The banks of the river are low, and planted with bananas. Here and there lie plantation houses, all in an advanced state of decay. Twice we passed the wrecks of steamers which had been dynamited by the rebels during the last revolution to stop the Government gun boats from approaching the capital of the State, Villahermosa.

Sighting a fast launch, we signaled it to come alongside, and the owner took us on board. This made better progress than our barge, and by noon we at last reached Villahermosa, and there found Mr. Gates and the two agronomists of the Tulane Botanical Expedition, Messrs. Hartenbower and Haskell.

Villahermosa is the Spanish for "Beautiful City," but alas, the name is the only thing beautiful about that place. To quote La Farge, verbatim, "There is little to say about it except that it is misnamed and smells worse than any town we have yet been in. The mediaeval atmosphere is completely preserved." Dirt and flies were so plentiful that we decided to leave the following day. Mr. Gates put his important botanical projects aside for a few days and joined us in order to make himself acquainted with our archaeological work.

Here again we met difficulties in buying animals, and as we were to return through Villahermosa a string of animals were hired to take us to Comalcalco. The country between the capital of the State and the town of Comalcalco consists of alluvial plains cut by many rivers, and covered with extensive pastures and scattered groups of trees. During the dry season it is preferable to travel at night, and we therefore left Villahermosa about 4:30 p. m.

An hour's ride from the town we reached Tierra Colorada, where we had to cross a broad and swift river called Rio Hondo, or Gonzales, or Plátano—all rivers here appear to have several names. Here our animals had to be unsaddled, and swim across, while we and our luggage went over in canoes.

An hour later we forded the Rio Cedro and then rode at a quick trot towards the north and northwest. For a long distance we followed the river bank. It was like riding through a beautiful park, and the trail being a "Camino Real," we found it well cleared. It was growing dark, and we hastened more, knowing that the people living at the next river crossing usually did not come out to ferry travelers over the river after nightfall. The night was magnificent with millions of stars and millions of fireflies. Fortunately we found an Indian with a lantern at the second pass and persuaded him with silver to ferry us over the river. Picturesque enough was the black water, the heads of the snorting horses alongside and an Indian at each end of the canoe balancing an 18-foot paddle.

On and on we rode until after 11 o'clock we clattered in on the cobble stone pavement of the village of Nacajuca. A nice, small town it was, with red tiled roofs and colonnades in front of the houses. Here and there hung a kerosene lamp. The noise of our cavalcade brought the dogs out to bark. Not a soul did we see until we reached the Plaza, where we found two heavily armed policemen and the local inebriate, celebrating with a phonograph. To our question, where we could find quarters for the night, the village drunkard replied by leading us to the house of one Doña Teresa. Several times we knocked on her door without getting any answer. Again and again our friend called, "Doña Teresa, Doña Teresa." We were just going to give up hopes of getting into what was said to be the only Inn of Nacajuca when we spied the flickering light of a candle through a crack in the door and heard whispering voices inside. Two women were discussing whether or not it would be safe to open the doors at that time of night; it might be bandits or rebels. Then one of the doors opened slightly and those within caught a glimpse of the writer's travel-soiled and blonde hair. Strange as it sounds, that sight induced her to open the door, and we were admitted into a vast room in which were two chairs and one table in addition to a child's bed in a far corner. We unloaded our animals outside the house and then led them right through the parlor out into the back yard. While we were hanging up our hammocks, the old lady produced a good meal.

The outstanding feature of Nacajuca is its jail, not that we got into it, but we were impressed by it as we rode past. The building looks solid, has two heavy wooden doors with monstrous locks, and an inscription in red letters on its end wall: *"Sal Si Puedes,"* which means "Get out if you can" (fig. 83).

The road beyond Nacajuca was good and hard, but this was the dry season; when it rains, it must be nothing more than a ditch full of mud. Along the sides of the road are rows of a century-plant

called Ixtle, from the fibre of which rope is made, and the finest of these fibres look like silk. We know that it was used for textiles in ancient times.

Just after having passed through another town, Jalpa, we were told that a bridge on the direct road to Comalcalco had broken down. We therefore made a detour, but soon had to get a guide, who took us over narrow back-trails out to the main road again. This same gentleman carried a bottle of rum as his provisions, and every time he met a friend they had to stop and talk business.

Chichigalpa was the last small Indian town we rode through before we crossed the stone bridge and entered Comalcalco.

This town consists of one interminable street lined by white houses with red tiled roofs. At the northern end is the Plaza with

Fig. 83—Nacajuca, Tab. The Village Jail. The inscription on the wall reads: "Get out if you can."

royal palms and an attractive church. We clattered along until we found the Municipal President's house. There we showed our credentials. The document had been written in the office of the Governor of the State. As the government calls itself bolshevik, both letterhead, text, and signature were in red. That is what one may call thorough.

The effect was instantaneous. A captain of police was placed at our disposal and quickly found quarters for us with some very nice Mexicans. For travellers they had a few rooms which opened out on a small patio with many flowers.

As the school teachers are generally the only persons in this part of the world who take any interest in such a strange thing as archaeology, we set out to look for the local specimen, and were fortunate

in finding an unusual man, Sr. Rosendo Taracena, in charge of the private school called "Alberto Corea." Since 1896 this man has published a small paper called "El Recreo Escolar." The pupils of this school do all the work on the paper—set it up, print it, and write no small part of its contents. He was keenly interested in our work, and was of great help to us during our stay at Comalcalco.

From him we got the first accurate information concerning the ruins near the town. To study these ruins was our object in coming to this place. Since the French explorer, Desiré Charnay, was here in 1880 the ruins have hardly been mentioned. The town lies out of the way of the usual traveller, and in later years the district called Chontalpa, in which the ruins lie, has been infested with bandits. So now that peaceful conditions have been established it fell to us to investigate these important ruins, so often mentioned in literature but inadequately described.

Most authors take their information from Charnay's book, "Les Anciennes Villes du Nouveau Monde," 1885, or its English translation of 1887, and seem to be unacquainted with his diaries published in the North American Review through the years 1880 to 1882. These diaries contain much detail not given in his finished work.*

The French explorer visited the ruins from November 12th to 22nd, 1880, and is very eloquent in his description. He speaks of towers of three stories and uses the word "immense" freely. He cleared the main mound and describes this, giving a ground plan, and mentions the three ruined temples to the north. These ruins cannot be compared with those of Palenque and Tikal. Comalcalco is a typical Old Empire city of no extraordinary size.

Horses were brought for us and, guided by the captain of the police, we crossed to the right bank of the Rio Seco, and rode northwards. A few miles from the town we turned due east, and soon came in sight of the first mounds.

To our left lay a temple facing east, and to our right rose the great mass of the main mound, the mound which Charnay had visited and mapped. We quickly dismounted and with Mr. Gates in the lead we scrambled up to the top. As the ruins were covered with dense bush, our first visit was by way of a preliminary investigation. Groping our way through the thick undergrowth we went from temple to temple. We had copies of Charnay's map and drawings, and with the help of these we soon found our way. Here were the "towers," which turned out to be two-story temples, and there lay the long building called the Palace.

*Charnay, 1881. Page 187-94—Charnay, 1885, French. Page 161-177—Charnay, 1888, English. Page 194-210. All other authors quote Charnay.

All the structures were built of brick laid in mortar, a rare feature in the Maya architecture. Remains of rooms were still standing, true Maya with corbelled vaults known as the Maya arch.

From the highest buildings we overlooked the surrounding absolutely flat country, dotted with innumerable mounds. Clusters of what looked like high trees generally turned out to be low trees on high mounds. There was much work in sight for us to do, and therefore, we decided to return to the town in order to arrange for the Indians to cut down the bush.

While we were roaming around to get a first idea of our work, the Mayor of Comalcalco, Don David Bosada, and one of his friends, Col. Manuel Graniel Gonzales, arrived. Both were interested in our activities and furnished us much information and help during our stay.

Our rough survey ended, we returned making a large cavalcade. Our entry into the town was quite formidable, riding six abreast down the main and only street of Comalcalco.

The greater part of the Indians do not pay taxes, but must do a certain amount of public work, such as clearing roads, every year. Often this obligation is abused by the authorities, but it seemed not to be so at Comalcalco. We asked for twenty men, and the following morning when we arrived at the ruins we found them waiting for us. At once they were set to cut bush at Temple 1, and by midday this temple lay bare, and the trees and bushes around the palaces were falling rapidly.

While the Indians were busy in this way we began to make ground plans of the buildings, and also sketches of several ornaments encountered.*

Most of the temples lie on a huge artificial mound about 35 meters high and 175 meters along its eastern base. The sides of this mound contain so few burnt bricks that there is little doubt but that the entire structure was built up of dirt and held by brick retaining walls. Apparently the mound faces west, i. e., towards the setting sun, as two arms extend in this direction and form the side of a Plaza at the western foot of the mound. We called this the Palace mound, the structure investigated and mapped by Charnay.

*The buildings were numbered as follows:

Numbers Given by T. U. X.		*Charnay's Numbers.*
No. 1.	Temple at South end of Palace Mound.	Tower No. 1.
No. 2.	Temple Facing North.	Tower No. 2.
No. 3.	Palace, East of No. 2.	Palace 3 and 4.
No. 4.	Temple on Palace Mound Facing South.	Not Reported.
No. 5.	Western of two Temples on Palace Mound Facing South.	Not Reported.
No. N-1.	Main Temple of North Plaza, Facing East.	Mentioned but not mapped.
No. N-2.	Temple on North Side of North Plaza, Faces South.	Mentioned but not mapped.
No. N-3.	Temple on South Side of North Plaza, Faces North.	Mentioned but not mapped.

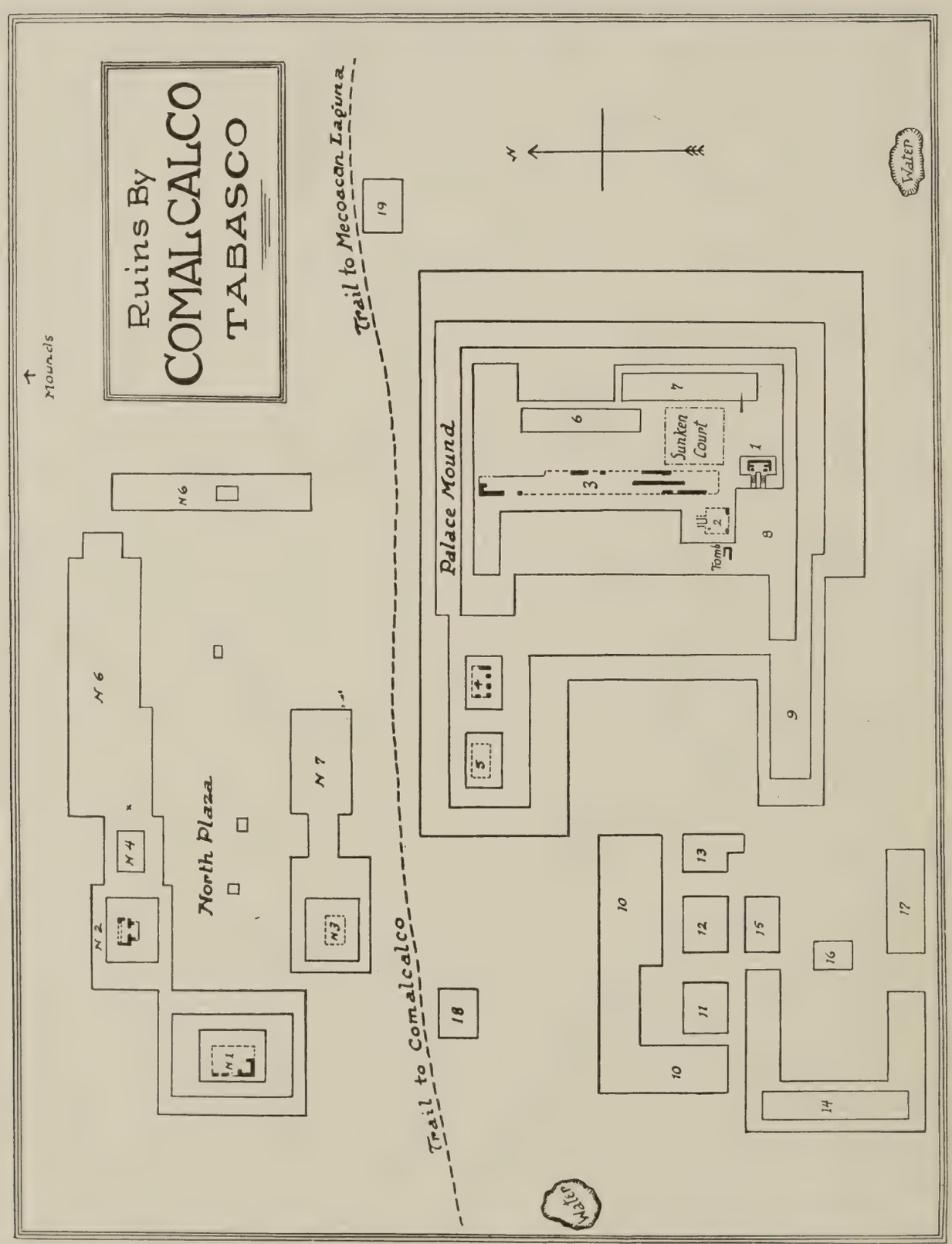


FIG. 84—Map of Comalcalco Ruins.

Temple 1, Palace Group. This building stands at the southern end of the Palace mound, or Acropolis. It faces west (fig. 85). Charnay describes it as a three-story tower, and compares it with the tower at Palenque, in which he is wrong. The tower at Palenque has several stories and an interior stairway. Temple 1 at Comalcalco may be called a two-story building in that it consists of a one-story temple, under the center of which is a single room reached through a passage from the front.

While clearing this ruin our Indians killed a large poisonous snake, a Nahuayaca (fig. 86).

FIG. 85—Comalcalco, Tab. Front of Temple 1.

The temple proper is of a form commonly found in late Old Empire cities. It stands on a terraced mound and is reached from the west side by two narrow stairways. Between these stairways is the passage which gives access to the chamber under the center of the floor of the temple proper. The front of the temple is 7.5 meters long and is divided into one broad doorway and two narrow passages by the ends of the side walls of the building and two square columns. Inside the temple are two parallel rooms. From the ground plan it will be noted that the walls and pillars of the temple are placed in such a way that their weight at no point lies directly over the lower chamber (fig. 87).

The building has fallen towards the southwest end, and the huge amount of debris lying on that corner of the mound indicates that the roof was of common Maya construction and the ceilings of the rooms were corbelled vaults. On one large block of masonry an elaborate ornament in stucco is still to be seen. This was reproduced by Charnay.* Indication of stucco ornamentation was also found on the front of the standing pillar. All walls as well as the steps leading up to the temple showed indications of having been covered with a thick layer of mortar with a highly polished surface.

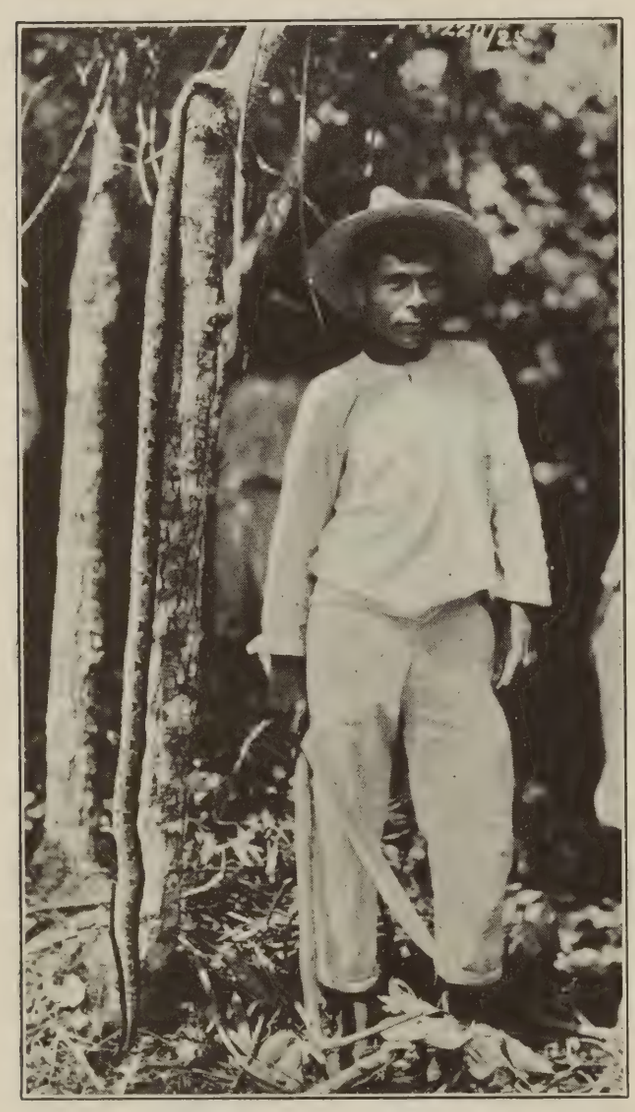


Fig. 86—Comalcalco, Tab. Indian with poisonous snake killed at the ruins.

The lower chamber is reached through a passage between the two narrow stairways leading to the temple, as already stated. Its floor is filled with debris and nearly all the stucco covering the walls has fallen off. Today it is the home of innumerable bats.

Temple 2. (Fig. 88). This building faces north and is badly ruined. From the few walls and the one column yet standing, it is clear that the ground plan of this building was similar to that of Temple 1, though it appears that a long room on a level somewhat lower than the floor of the temple proper was attached to the southern side of the structure. A lower chamber similar to the one in Temple 1 is also found here. On the top of the debris of this building lies a huge block of masonry on which is seen the torso of a man modelled in stucco relief.†

We now turn to the *Palace,* the largest of the structures on the mound and stretching from south to north. Its total length is 80 meters and its breadth 8 meters. It contains two parallel galleries, which may have been divided into rooms. Doors opened both

*Charnay, 1888. Page 204.
†Charnay, 1888. Page 210.

towards the east and the west. Only a small part of the building is still standing, and from this it is seen that the ceilings of the rooms were built in the form of corbelled arch (fig. 89).

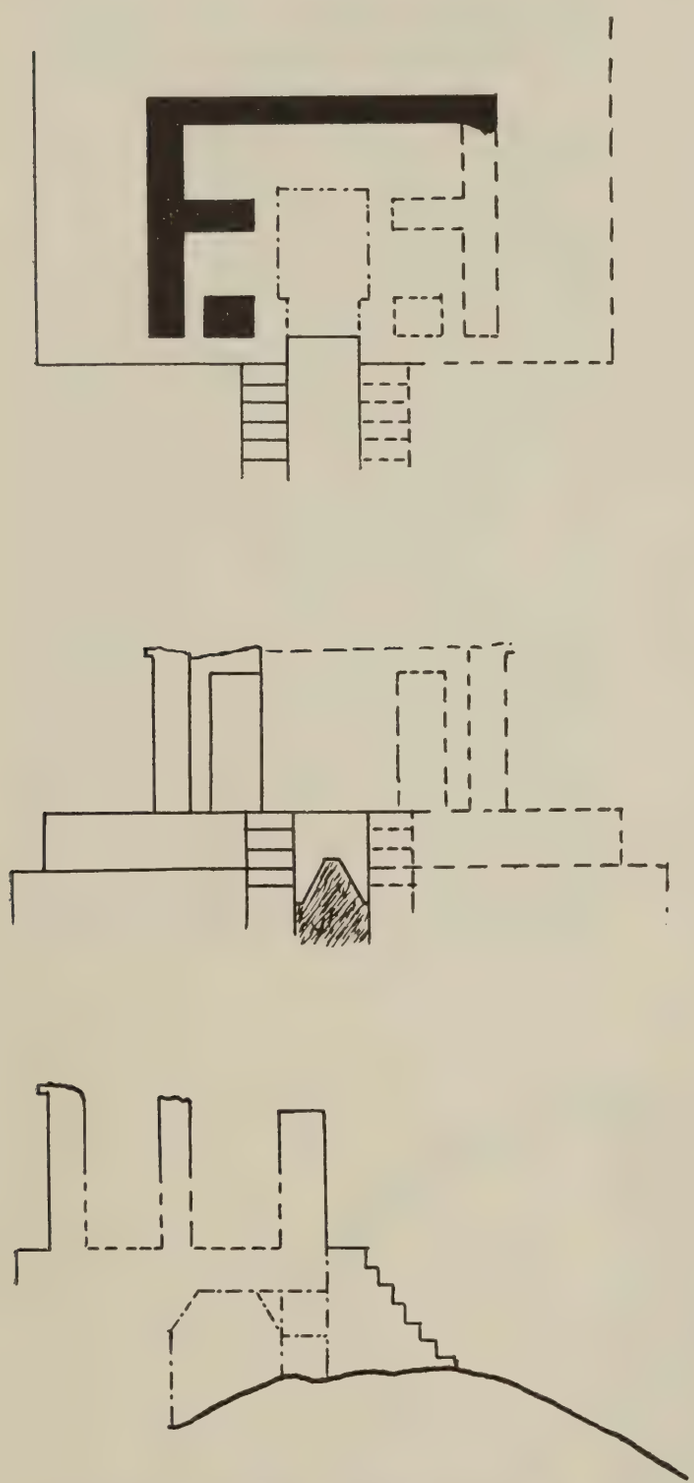


Fig. 87—Comalcalco, Tab. Ground plan and section of Temple 1. Scale 1:200.

The walls of the Palace are stuccoed as also the sides of the arch, but in this latter place we again see a new feature. On the masonry of the arch great quantities of pot sherds have been plastered and over these the smooth coating of stucco has been applied. These broken pots must have been placed there because they would hold the stucco better than the rough wall. Among these sherds is one of a *coiled* pot (fig. 90).

A kind of window leads out to a small sunken court to the east of the Palace, and over this window lies the largest brick seen in the ruins, measuring 1.02 meters long, 50 c.m. broad, and 5 c.m. thick (fig. 91).

Apparently the central wall and the interior half of the arch was built first, and the exterior half of the arch made to lean against the central core. There is no *key slab,* as is the custom in all other Maya building. This is probably because of the use of baked brick as building material instead of the cut limestone used in other Maya cities (fig. 92).

The exterior profile of the roof is similar to the roofs at Palenque, and there are likewise signs of stucco ornamentation on the roof slope. Charnay speaks of a roof comb on the Comalcalco

Palace. If such existed, it must have been small, as there is little débris on the top of the roof.

We were struck by the small amount of débris found on the northern half of the Palace ruin, but this is explained by the fact that two bridges and several houses in Comalcalco have been built with bricks from the ruins.

A small trench dug in the standing part of the Palace revealed a floor of highly polished stucco.

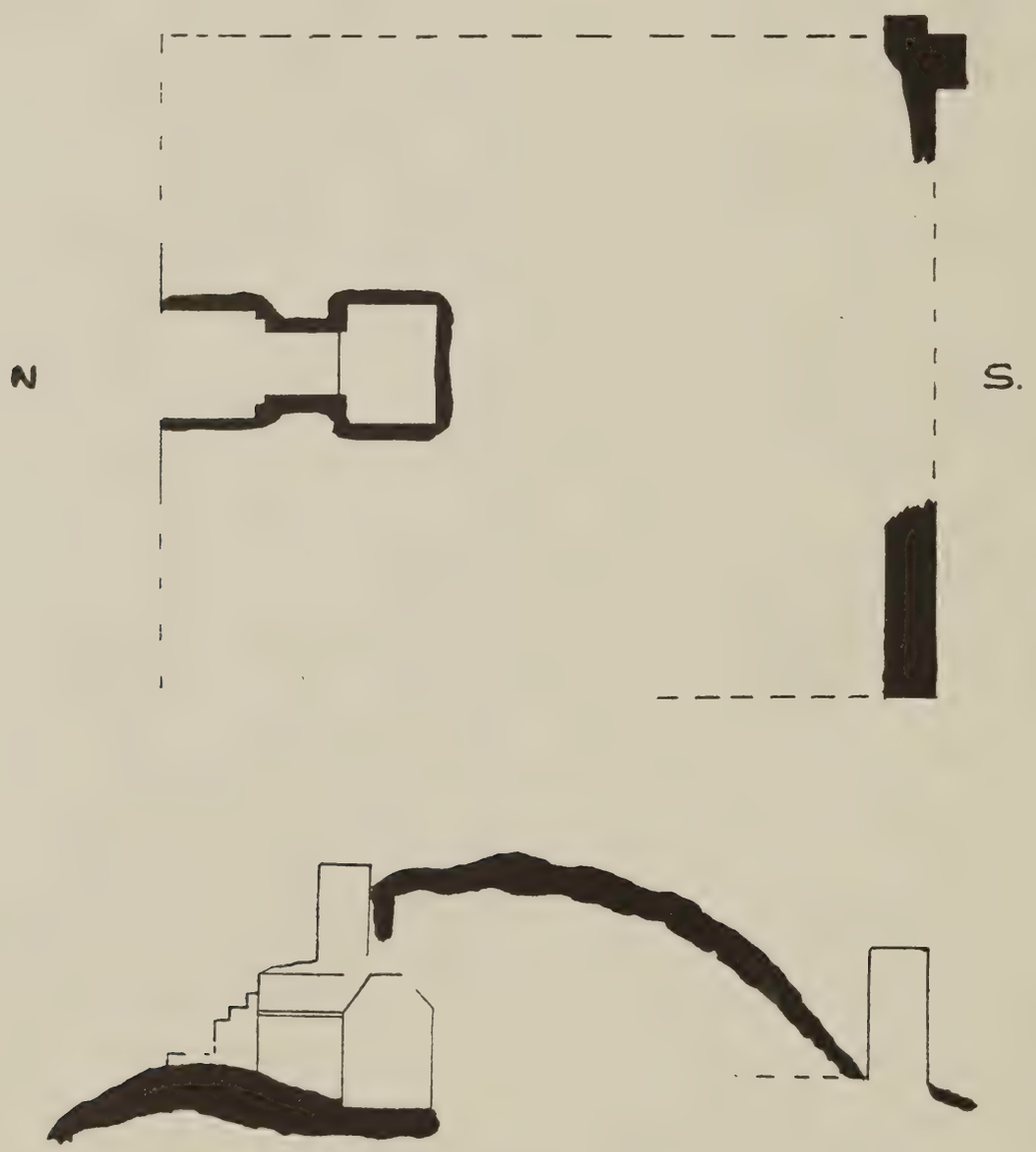


FIG. 88—Comalcalco, Tab. Ground plan and section of Temple 2. Scale 1:200.

On the top of the Palace Mound only two more structures are to be mentioned, mounds 6 and 7. Of these No. 6 appears to be a building in complete ruin. No. 7 does not show indications of having supported a building. Between this latter mound and the southern end of the Palace is a small sunken court.

The Palace Mound shoots out two spurs towards the west, on the southern one of which are some small mounds which may contain tombs, and on the northern are two Temples, Nos. 4 and 5. They both face south and are in an advanced state of ruin.

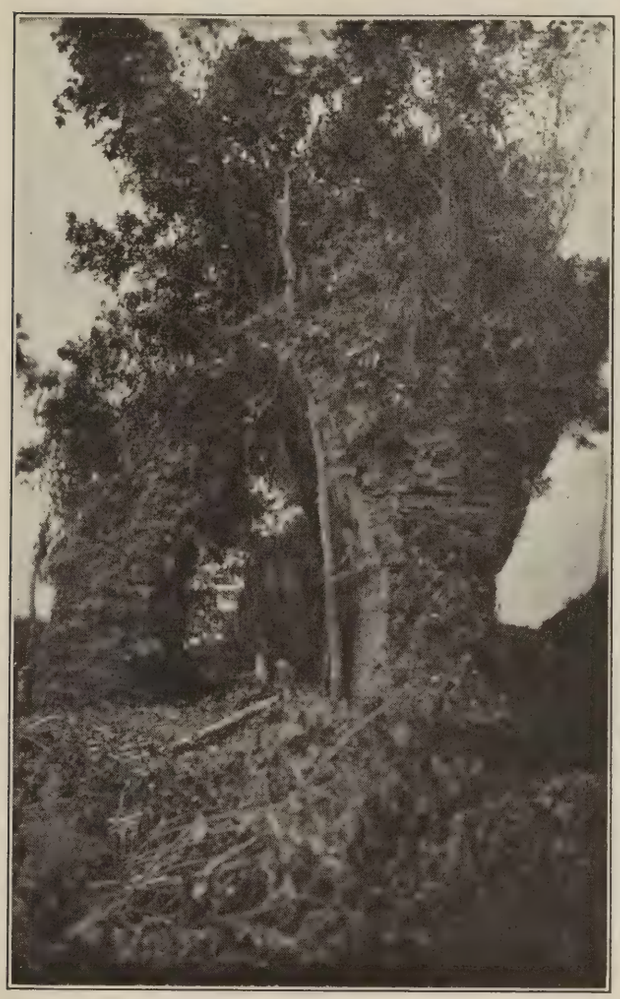


Fig. 89—Comalcalco, Tab. Remains of the Palace.

Between the two mentioned spurs at the western foot of the Palace Mound lies a small Plaza, and further to the west is a series of large and small mounds, of varied form, arranged unsymetrically, though their sides are oriented to the cardinal points.

We now cross the trail between Comalcalco and the Lagoon of Mecoacán and reach the northern Plaza. At the western end of this Plaza arises a pyramid about 20 meters high, crowned by the ruins of a temple that faces east, towards the rising sun. This temple we named N-1. It is badly ruined—the whole front has fallen, leaving only the back wall and part of the southern wall still standing (fig. 93). The debris is so thick that it was not possible to make out the ground plan of this building. Down on the eastern side of the pyramid, where the stairway leading up from the Plaza to the doors of the Temple used to be, La Farge found a fragment of a large stucco head modeled on a core of burnt brick (fig. 94). Here also were found several bricks with incised drawings.

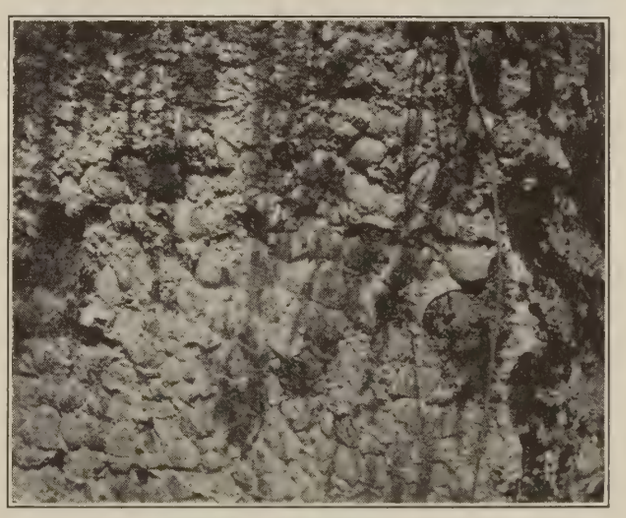


Fig. 90—Comalcalco, Tab. Potsherds on the wall of the Palace.

To the north and south of this main temple are long terraces extending towards the

east, and on the ends of these nearest the main Temple are ruins of two smaller temples, N-2 and N-3, both facing towards the Plaza.

On the top of the northern terrace, in a place marked X on the general plan of the ruins, Professor Taracena, our friend from Comalcalco, found a large clay pot. This has the form of a huge flower pot, and was found interred in the ground, standing with

FIG. 91—Comalcalco, Tab. East wall of the standing portion of the Palace.

its opening downwards (fig. 95). Professor Taracena brought the pupils of his school out to excavate the urn. All the fragments of it were carefully collected, and when brought to the school house at Comalcalco they were assembled. Now the huge pot stands in the main class room together with many other objects found at the ruins. When we had finished our explorations we also had the large stucco head found on the east side of the main pyramid of this northern group (N-1) brought to the school, so that it might be taken care of by one of the few men in the region who respect the antiquities of their country.

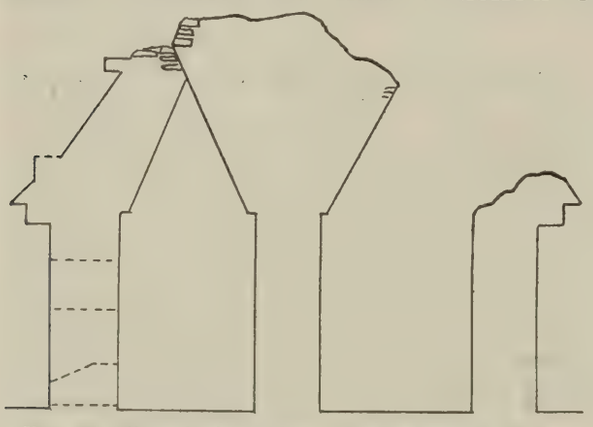


FIG. 92—Comalcalco, Tab. Cross section of the standing portion of the Palace. (Scale 1:500).

The northern Plaza is closed to the east by a terrace, on the center of which is a small

mound. A line drawn from the center of the Pyramid N-1 to the central mound on the east terrace points true east, and there is little doubt but that the Maya astronomers used this line for their observations on the rising sun and the stars.

Fig. 93—Comalcalco, Tab. Main Temple (N-1) on the Northern Plaza, showing its Southern walls.

The ruins near Comalcalco lie on the alluvial plains of Tabasco, not very far from the coast. There is no rock in this area, and therefore the ancient builders had to burn brick for their structures.

Between Bellota and Comalcalco, 70 kilometers distant from each other, several groups of mounds have been described by Berendt and Seler, and they both state that these mounds have retaining walls of brick.*

This is the only place in the Maya area where we encounter brick as building material. The average size of the bricks in Comalcalco is 19 c.m. broad, 25 c.m. long, and 4 c.m. thick. The bricks were burnt in open fires, as they all have a black stripe inside when broken, showing that they were not baked through. Many have incised designs, crude attempts on the part of the brick makers to copy hieroglyphs and ornaments on the temple walls (fig. 96). Charnay mentions two such bricks which he sent to the Trocadero Museum in Paris. We were fortunate in finding several fragments and one complete brick, which was delivered to the Department of Anthropology, Secretaria de Education Publica, in Mexico City by Mr. Gates. One of the fragments shows the lower

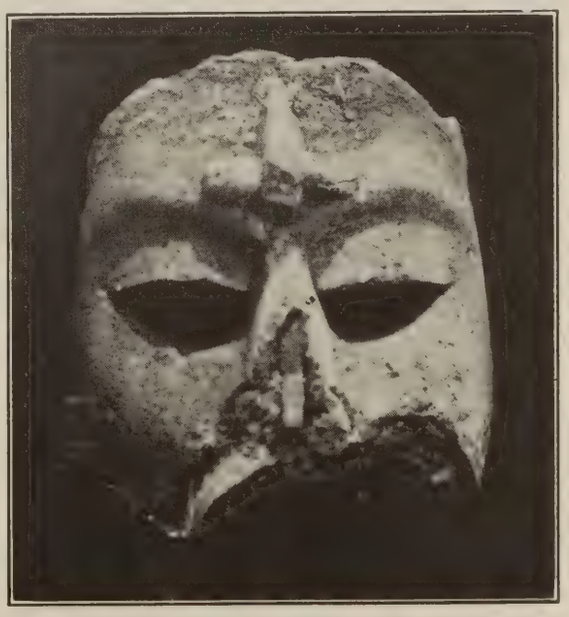


Fig. 94—Comalcalco, Tab. Stucco head on brick core found upon East side of Temple Mound, N-1.

*Brinton, 1896. Page 8—Seler, E., 1904. Vol. V, Page 149. Plate XIII, 2.

part of a warrior holding a spear. The complete brick has on its surface the drawing of a conventionalized serpent's head. The drawings on these bricks closely resemble the scratchings found on the walls of many of the temples in the Petén area, such as Tikal, Nakum, and San Clemente.

Not far distant from the ruins, to the east, is a large lagoon, the Mecoacán, where oysters abound. Here is where the ancient builders got the oyster shells which they burnt into mortar and used as binding material for their brick, and for the stucco surfaces of their walls. The layers of mortar between the brick are usually about one centimeter thicker than the brick itself, and the mortar used for the walls is crude, containing many unburnt oyster shells.

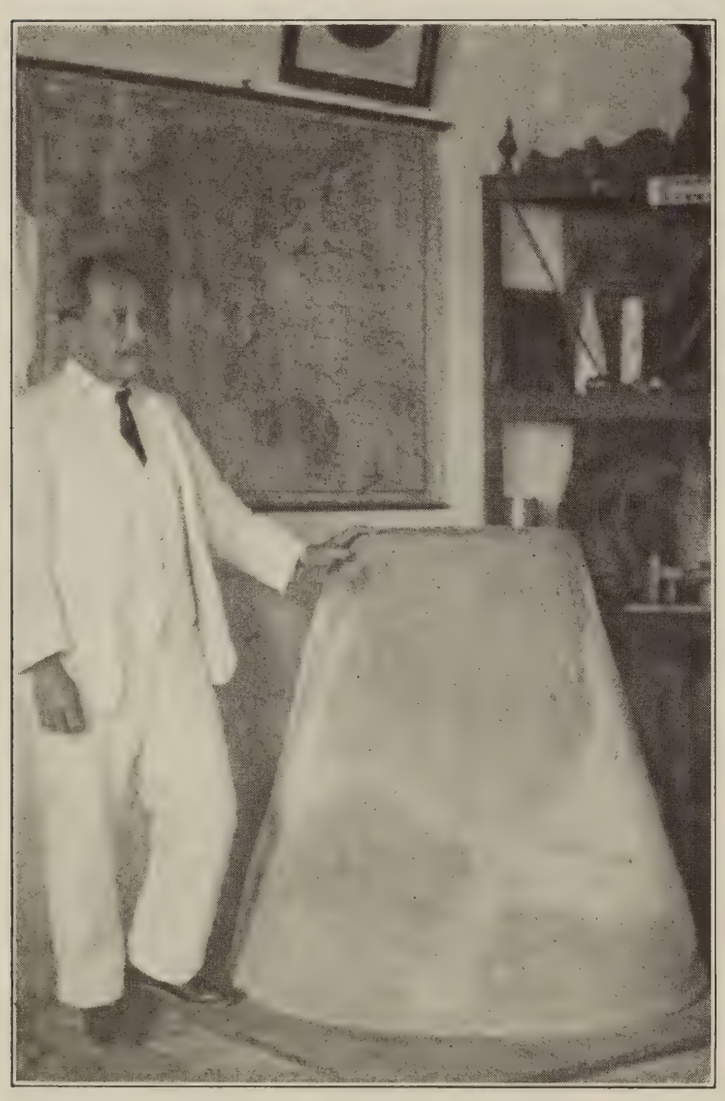


Fig. 95—Comalcalco, Tab. Professor Taracena with huge pot found by him in the North Plaza of the Ruins. Circumference at bottom 3.40 m. Height 1 m.

The rough walls of the building were covered with a layer of fine mortar, or stucco, and this was painted. The color most commonly used was a deep red, extracted from the red ochre earth so abundant in the whole of the Maya area. Blue, green, yellow, and black were also used.

One outstanding feature of all Maya buildings is the corbelled arch. The Maya architect never learnt how to build the true arch. When the vertical walls of a building had reached the desired height, the mason pushed one stone at a time a little further in than the next lower one, and by doing this from both sides of the room, the stones would eventually meet in a point. In stone buildings a cut stone slab, the Key Slab, would close the arch. In the Comalcalco buildings the two slanting walls meet. This was a cumbersome

system of construction, giving very little room space in comparison to the solid masonry, and did not permit of very broad rooms. The width of the rooms can often be taken as a criterion for the age of the building. In the oldest buildings the walls are thick and the rooms very narrow. As the architect becomes more skilled he broadens the rooms. In Northern Yucatan where the Maya went through his renaissance, we find quite broad rooms with very sloping ceilings.

All our work had been finished. We had drawn ground plans and sections of the temples, made a general map of the ruins, taken notes on art and construction. It was late in the afternoon and we were ready to leave Comalcalco the next day. Only a small ruined room remained to be placed on the general map. This room lay hidden by thick undergrowth, on the western slope of the Palace mound quite near Temple 2. It was a small room, probably an old burial place. Most of it had fallen in, and what was exposed did not appear to be of great interest. "Brick clad with stucco. Ceiling of room and some of east wall exposed. 1.75 meters long and 1 meter broad. Nothing much to note." That is how the notebook runs. The sun was standing low, and its rays fell on the east wall of the room. "What was that on the walls—some stucco ornaments?" Eagerly we scraped away a great mass of fallen leaves and dirt. The feather ornaments of a helmet appeared, then a face, all modeled in stucco low relief. More feathers, and part of another face. After all we had not finished our work at the ruins. Here before us was a burial chamber with delicately modeled figures on its walls. We must clean this out before leaving. Thrilled with what lay in store for us we rode back to the town through the short tropical dusk.

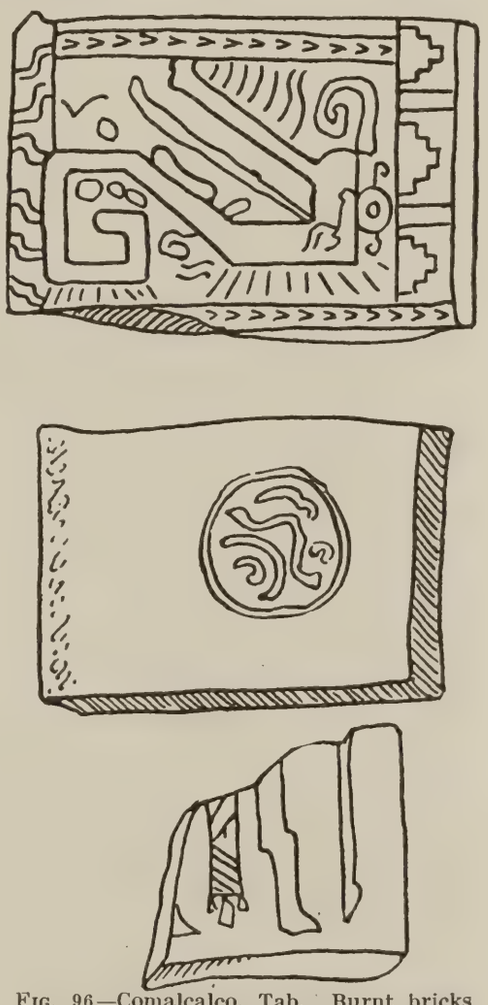


FIG. 96—Comalcalco, Tab. Burnt bricks with incised drawing.

Early the next morning we were ready to clean out the burial chamber. Only five Indians were employed, as there was not much room in the narrow chamber. Our excitement seemed to communi-

cate itself to our Indian workmen. With the greatest care they removed dirt and stones, and by noon we had exposed the upper part of nine figures, three on the south, three on the east, and three on the north wall. The entrance to the chamber had been from the west, and on this side we found the blocked door. These nine figures delicately modeled in low relief are some of the finest pieces of art as yet found in the Maya area.

Fig. 97—Comalcalco, Tab. Tomb showing East wall and four pillars.

By noon the next day the small chamber had been cleared. We had reached its highly polished red cement floor (figs. 97 and 98).

On this floor stood four low pillars built of brick, and from the dirt around these we extracted a large amount of clam shells, all squared and filed, and with two holes in each for suspension. They had once formed part of a necklace worn by the noble or high-priest who had been laid to rest in the chamber. All these shells had been painted with a red earth. Some fragments of human bones were also found, and these too were covered with the same red substance. Whether this is a case of secondary burial with painted bones, or whether the red colour came from the great amount of shell ornaments found all over the floor of the grave, we were not able to judge (fig. 99).

It looked as if a wooden slab had been placed on the pillars on the floor of the chamber and on this table the body had been laid. Due to moisture percolating through walls and ceiling of the chamber, all had decayed except the shell ornaments and a few bits of bone.

Standing at the western end of the chamber, we look at its back wall—the east wall. Here we see three figures. The central one is undoubtedly intended for the most prominent person of the nine pictured on the walls (fig. 100).

The head of this figure (No. 5) is shown in right profile, the shoulders and body in front view. He is turning to a person on the right (No. 4). On his head is a simple helmet, in his ears are earplugs, around his neck a string with a large pendant, and around his waist a loin cloth. The body is nude, and the face and shoulders are badly weathered (fig. 101).

Figure No. 4 is shown in left profile, turning towards No. 5, and with his right arm lifted in gesticulation, as if to emphasize what

Fig. 98—Comalcalco, Tab. Necklace made of clam shells, found in tomb.

he is saying. He wears a helmet and earplugs. On his arms are cuffs, and on his breast hangs a pendant in form of a bar. His loin cloth is very elaborate. He turns his shoulders in front view, but there is a twist in the drawing indicating that he is on the verge of turning towards Figure No. 5 (fig. 102).

Back of No. 5 stands a man, No. 6, shown in right profile, head as well as body. He stands stiffly erect with his arms crossed over his chest, a servant standing at attention by his master (fig. 103).

Three groups of hieroglyphs may explain this scene. Some parts of the glyphs have disappeared, and the ones preserved belong to those which we as yet cannot read. None of the glyphs in this tomb

are calendrical, so we have to estimate its age by artistic criteria (fig. 104, d, e, f).

On the south wall, we see three more figures, Nos. 1, 2, and 3. *No. 1* standing stiffly erect with his arms crossed over his chest is shown in left profile (fig. 105). Before his face is a column of glyphs (see fig. 104-a). The central figure, *No. 2,* in right profile with body in front view, is bending slightly towards No. 1. Part of his head-dress and his left arm have disappeared. In his right hand he holds a bag, and around his neck is a string of beads (fig. 106).

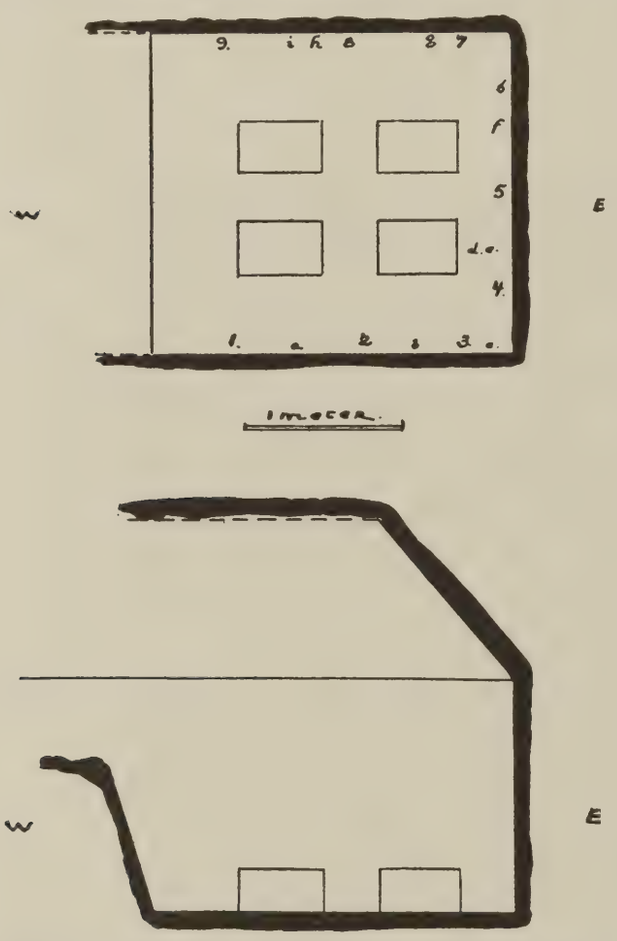


Fig. 99—Comalcalco, Tab. Ground plan and section of tomb. Nos. 1-9 refer to position of stucco figures. (Fig. 100-103, 105-110) Letters a-i refer to hieroglyphic inscriptions (Fig. 104).

No. 3 is the best preserved of them all. A standing man is shown in right profile with downcast eyes. The whole figure shows repose, one might say sadness. His head-dress is smaller than the others. On his chest hangs a large pendant, probably meant to represent a face carved in jade (fig. 107).

Of the three groups of glyphs on this wall, the greater part has fallen away, only showing impressions in the stucco where they once were placed (see fig. 104-a, c).

On the northern wall there are three more figures, all with nude bodies, dressed only in loin cloths and hats. Figures No. 7 and 8 are shown in left profile, Figure No. 9 in right. We were fortunate in being able to make a paper squeeze of the head of Figure No. 7. This head is exquisitely modeled, and ranks among the finest pieces of Maya art (fig. 108).

Of figure No. 8 only the shoulders and the lower part of the face is preserved. Bricks from the ceiling had fallen and crushed it long ago. Enough, though, remains to show us that this figure wore a bead necklace and a large earplug. The face turns the left profile towards the spectator, and the shoulders are seen in full view (fig. 109).

FIG. 100—Comalcalco, Tab. East wall of tomb showing figures 4, 5 and 6, and hieroglyphic inscriptions d, e, and f.

FIG. 101—Comalcalco, Tab. Tomb, Fig. 5.

Fig. 102—Comalcalco, Tab. Tomb, Fig. 4.

FIG. 103—Comalcalco, Tab. Tomb, Fig. 6.

And last we come to Figure No. 9, a fat-bellied elderly gentleman shown in right profile with stumpy nose and heavy chin, and apparently a hunchback (fig. 110). (The glyphs on this wall are Figure 104, g, h, i).

This completes the array of figures. Every one is different from the other, every face showing character. No doubt they are all

Fig. 104—Comalcalco, Tab. Hieroglyphic inscriptions on walls of tomb.

portraits.* They may be a picture of the dead ruler and his foremost court attendants and servants. It is distressing to have to refer to them by numbers. One is tempted to give them names and to try to imagine their lives. Bishop Landa tells us that the rulers of Yucatan, at the time of the Conquest, kept troupes of actors and

*Spinden, 1916.
*C. F. Spinden, 1916.

Fig. 105—Comalcalco, Tab. Tomb, Fig. 1.

Fig. 106—Comalcalco, Tab. Tomb, Fig. 2.

FIG. 107—Comalcalco, Tab. Tomb, Fig. 3.

FIG. 108—Comalcalco, Tab. Tomb, Fig. 7.

FIG. 109—Comalcalco, Tab. Tomb, Fig. 8.

Fig. 110—Comalcalco, Tab. Tomb, Fig. 9.

jesters. Was our hunchback the court jester, grown sorrowful, now that his chief had died? The feet have been done in a conventional way, the loin cloths with more care, and the faces with a rare mastery of relief. No doubt the Maya artist knew the full value of shadows thrown by the relief, and utilized this to give expression.

In this small chamber we stand before the best stucco work yet found in the Maya area. Even the fine stucco figures in Palenque do not reveal such mastery and freedom of line.

Both the figures and the walls of the tomb were painted in the same deep red color as the floor.

When the tomb had been cleared we spent a day in cleaning the figures carefully with soft brushes and filling all cracks with cement so that these magnificent figures would be protected against destruction by the elements. The Muncipal President of Comalcalco, Don David Bosada, was fully aware of the artistic and historical value of our discovery, and he at once ordered a roof to be built over the chamber to protect it against the tropical rains.

Again it was late afternoon. The rays of the setting sun fell on the central figure of the back wall, perhaps the picture of the dead chief. Let us give imagination a free rein for a moment, and see the tomb ready to receive the lifeless ruler. His career had ended, and as the sun, worshipped by him and his people, was setting and its rays fell on his picture on the back wall of the tomb, they laid him to rest on the wooden table on the floor of the chamber. Around him stood his friends and servants mourning, as we now see them pictured on the walls.

And as the last rays of the sun fell on the picture of the chief who had died about 1,400 years ago, and whose portrait we had again brought to light, we left the ruins to continue our journey through the country where his race flourished long ago.

As we rode away our thoughts went back to the splendor of the ancient Maya. We saw the main mound crowned by Palaces and Temples, with Plazas at its base, and were reminded of what Bishop Landa tells us about the Maya towns. To use the good priest's own words:

"Before the Spaniards conquered those lands the natives lived in towns, well arranged, and their lands were clean and free from weeds, and planted with good trees. And the houses were arranged in this way: In the middle of the town were the temples around handsome squares, and around the temples were the houses of the rulers and the priests, and after these were those of the principal people, and in this way the richest and most highly esteemed lived nearest to them, and towards the edges of the town were the houses

of the lower classes. And where there were wells, these were near the houses of the nobles; and they had their inherited lands planted with vine trees (sic) and sown with cotton, pepper and maize, and they lived in these congregations for fear of being captured by their enemies, and as a result of the Spanish Conquest they scattered into the forests."*

Only the houses of the most noble, the rulers, and the high-priests were of stone. The rest of the population lived in thatched huts. Now all these dwellings of perishable material have gone, and on the top of the mounds lie the ruins of the temples, like monuments to the greatness of bygone days.

It is from Bishop Landa that we get most of our knowledge of those ancient times. He further tells us of the gods and the priests, of the rulers and the nobles, and of the life of the lower classes.

Who were the gods to whom such magnificent temples were erected? Who were the priests who served the altars of the gods?

Little do we know about the Maya Pantheon, and what we do know has been gleaned chiefly from the early Spanish records. We know that the great creator of the world was Hunabku, but we do not know where or how he was worshipped. His son Itzamna, on the other hand, played an important part in the Maya ritual. He was the father of the gods, the creator of man. His home was in the east, and he was, therefore, the god of the rising sun, of life and light. It is said that he invented writing and books, and that he had great knowledge as a healer. As a sky god we often see his head on the monument, emerging from the jaws of a double-headed monster.

Though Itzamna was the god of the rising sun, a god who gave light and life, a benevolent god, he was not worshipped as much as the rain gods. The Maya being an agricultural people, and rains being of prime importance to their crops, the rain gods, called Chac, naturally played a supreme role in their religious system. Many times a year ceremonies were conducted in honour of Chac, but specially just after the planting of corn. Incense and rubber were burned at these ceremonies. One of the common offerings was to pierce one's ears and let the blood drop on balls of cotton. In this offering the Maya gave of what was most valuable to him, his own blood in honour of his gods. The people met before the temples when conducting special ceremonies, and performed elaborate dances to the rhythm of drums and rattles, while clouds of fragrant copal incense rose to the sky, and the high-priest smeared the image of the god with blood of man and animals.

*Landa, 1864. Page 90.

Ahpuc was greatly feared. He was the god of death, probably identical with Hunahau, ruler of the underworld, Mitnal, or Xibalba. This god is always pictured as a skeleton having a human skull. He is the special patron of those who are sacrificed to the gods, those who die when giving birth, and also of beheaded captives (fig. 111).

A close associate of the death god is the God of War, and his henchman Ek Ahau, the black captain.

Fig. 111—Hun Ahau, the Maya God of Death. (From the Dresden Codex).

At each of the four cardinal points, north, south, east and west, stood a god, a Bacab, holding up the four corners of the sky. They were close friends of the Chacs. In turn they ruled over the year, and one of them, the most benevolent of the four brothers, Hobnil, was the special patron of those who grew cacao and raised bees.

There were gods for the huntsmen, gods for the fishermen, and a long array of gods for medicine and healing. Of these latter, Ixchel, the rainbow, wife of the great god Itzamna, was the goddess of childbirth, and her image was always placed under the bed of the woman expecting a child so that the birth might be easy.

There were gods for singing, gods for weaving, and Ixtab protected those who committed suicide by hanging. The traveling merchants gave offerings to Xaman Ek, the god of the North Star, and to Ekchuah they offered incense every evening when on the road, praying for a safe return to their homes.

The gods were many, and no common man could know their wants and wishes, but sought the advice of the Chilán, or priest. Every village had temples, or idol houses, as the Spaniards called them, and the Chilán studied the stars and read the sacred books. From these sources he was able to announce if it was a good time to plant the corn field, if the gods would protect the merchant on his voyage, and if the newborn child had come into the world on a lucky day. He was considered the mouthpiece of the gods, and was so highly esteemed that he was never allowed to walk, but was always carried about on the shoulders of men. The community supplied him with house and food, and the chief of the village bowed to him and asked his advice. Four old men were elected every new year to assist the Chilán with the ceremonies in the temple.

But over the Chilán stood the high priest, the Ahkin May, or Ahau Can Mai. All other priests paid tribute to him, and he only appeared in public on the most important occasions.

He gave advice to the great rulers and educated the younger sons of the rulers and nobles in the sciences of the nation; he wrote the sacred books; and initiated the priests of the towns, and examined them in the rituals and the sciences.

When the Ahau Can Mai stepped out in front of the altar he was dressed in rich costume. On his head he wore a wooden helmet covered with a mosaic of jade and coloured shell. From this helmet floated the emerald green feathers of the sacred Quetzal bird. Around his neck hung chains of carved jade, his nose was perforated and traversed by a nephrite bar, and in his ears were plugs of jade. He was clothed in a finely woven cotton garment held around the waist by a heavy belt set with carved stones. His bare wrists and ankles were adorned with cuffs of cut jade, and he wore elaborate sandals on his feet. In this gorgeous costume we see him pictured on the monuments, and in this costume we in our imagination see him give offerings to Kinich Ahau, the god of the sun, or to Yum Kash, the lord of the forest.

Once great crowds gathered eagerly awaiting the word of the gods through the mouth of Ahau Can Mai where now thick underbrush covers the Plazas, and where the roots of century-old trees are splitting the temple walls, slowly but surely erasing the traces of a once mighty culture.

Our stay at the town of Comalcalco was very delightful. The family with whom we boarded looked after us well. Never will we forget the delicious cups of steaming, foaming chocolate our hostess put before us—not chocolate or cocoa such as we get at home, made of the dry powder that remains after the cocoa butter has been pressed out of the bean, but a beverage made directly from the freshly roasted bean. No one knows how good chocolate is until he has tasted it in Comalcalco. We now understand why the Spanish Conquerors took so eagerly to that native drink, but we do not understand why the friars preached so energetically against it.

Professor Tarasena, Colonel Graniel Gonzáles, and the Municipal President, Sr. Bosada, made our visit a pleasant one. Nobody could wish for a more cheerful gang of labourers than the one we had there. During the day they slashed their way through the thick undergrowth which covered the ruins, all the while joking and teasing one another with much laughter. But the climax of their hilarity came when the work was over and each man passed us by receiving his pay, a cigar and a small drink as a special award.

Comalcalco has some trade in coffee and cacao, but as the roads to the capital of the state are very bad, all exports and imports go

by truck to the small port of Seiba, a distance of about eight kilometers, and from there by boat to Puerto Mexico, taking about 18 hours to cover the distance. Had we known that we could take this short cut, we could have saved ourselves the long trip via Frontera and Villahermosa.

Professor Tarasena not only helped us in our work, but also showed us his school. He took us through his two class rooms, where there were rows of small boys humming their lessons in subdued voices. He showed us his small printing press where he and his pupils print a little periodical. But his pride was his child-teachers. Every Mexican child had a small Indian boy as pupil. With

Fig. 112—Comalcalco, Tab. Boy teachers and their pupils.

much pleasure we shook hands with these small teachers and their pupils, and took a photograph of them (fig. 112).

From several sources we were informed that a certain Señor Miguel Ceballos Saenz once had owned the land on which the ruins are located, and that he had collected many objects of archaeological interest. About the beginning of the month of March he had died. His family was said to have his collections, and as we naturally were much interested in seeing these things, we asked permission through our friends. But the widow flatly refused to let us come near her house. We tried to persuade the lady's brothers, José and Santiago Fuentes, to help us, but though we approached them in the most

respectful way, we were received with foul language and treated as if we intended to steal something. The result was that we did not see this collection, and left Comalcalco with the feeling that we had not quite completed our work there.

The Indians who worked for us, and who constantly hailed us along the roads with their cheerful greetings—"Buenas dias, Señor. Que le vaya bien"—are a branch of the great Mayance stock, speaking a language commonly called Chontal, closely allied to true Maya. (See Appendix III). Here at Comalcalco, however, the tall stature and heavy-boned strength of our workmen presented an appearance strikingly different from other tribes of Southern Mexico. One big one with laughing eyes, and a square jaw covered by a close, red stubble, who stood atop of Temple 1, joking about cold beer, while La Farge negotiated the painful scramble up to his level; or "Don Juan," our head man, with a bearded profile like Othello, standing, legs braced, swinging with one hand a machete that we should have had to handle like a broadsword, showed us that here was some alien blood.

In fact, this section was once a haunt of the French and English buccaneers, who found in the Dos Bocas River a fine hiding place while refitting their vessels, whether they came to trade in hides or sack a town. Sailors all, and a tough lot to boot, they left their mark on the Indians with whom, on the whole, they maintained friendly relations.

Of the forty-odd men who worked for us in the course of our stay, three or four showed mixed gray or hazel eyes, and two had reddish brown beards, although all had the usual, stringy black Indian hair. Only a few were of the ordinary, short, small-boned Maya build. They made very good and extraordinarily cheerful workmen.

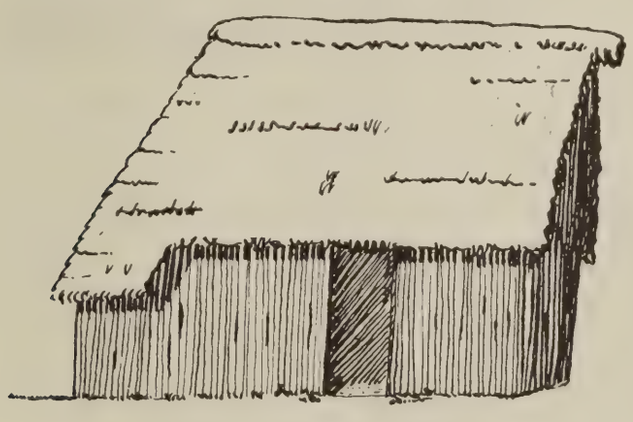


Fig. 113—Chontal House.

Their houses are built of stick walls, with palm-thatched roofs. Occasionally the walls are also thatched. The long rib of a palm frond is split, so that the leafage of both sides hangs down. The whole frond is then attached to the wall parallel to the ground, and tied with vines. The corners of the houses are rounded, and the thatching poles on the roof, which run parellel to the eaves, are carefully bent to carry out this curve. The roof comes further down at the

back, either in one place, to form a pent house, or all along the back walls (fig. 113).

Windows are not ordinarily used, but there are usually two doors and a rough division inside, cutting off the kitchen part, is common. The fire-place is built on a raised platform of stones and dirt.

On our return trip to Villahermosa there was no necessity of making a detour, as the bridge had been repaired, so we went direct by the Camino Real. Near the small Santa Cruz ranch we noted a group of mounds arranged in a square, and one of the ranch houses was built on the top of a mound.

Two days ride brought us back to Villahermosa. As we passed through Nacajuca we again slept in the house of Doña Teresa, and this time we were received without apprehension.

Animals had come for us from Villahermosa. They were a batch of skinny brutes, and though they had had several days rest in Comalcalco, they were barely able to carry us back. As a matter of fact, the writer had to change his animal, and La Farge made part of the journey on foot, finally arriving in Villahermosa dragging his mount along after him.

Fig. 114—Villahermosa, Tab. Front view of clay head in Instituto Juarez. (45 c.m. high).

While Mr. Gates was waiting for conferences with the Governor of Tabasco relative to the agronomical research conducted in that state by the University, we had our photographs from Comalcalco developed, and purchased saddles and pack saddles for our long ride to Guatemala which was now about to commence. An attempt was also made to buy mules, but here, like everywhere else, the supply had been cleaned out by the last revolution. The few mules for sale were held at very high prices.

In the Instituto Juarez, the high school of the town, we inspected a small collection of antiquities, which had come from different parts of the state. Several of these objects showed the peculiar skill with which the ancient Maya modeled in clay. Among them was a large clay mask shown in Figs. 114-115.

We bade farewell to Mr. Gates, who was returning to Tulane by way of Mexico City, and to Messrs. Haskell and Hartenbower, the Tulane agronomists, and boarded a small river boat which was supposed to leave for Jalapa on the Tacotalpa river. The boat was due to leave about noon, but we found ample time to have our dinner in town at 7:00 p. m. Officially there was something wrong with the machinery, but we suspected that the owners were not over anxious to leave, as their boat had been commandeered to go up the river to collect the local beauties for an official ball, and the owners foresaw that they would have to wait a long time before they got their pay for that trip.

FIG. 115—Villahermosa, Tab. Side view of clay head in Instituto Juarez. (Same as FIG. 114).

By orders of the Governor, horses had been waiting for us all night in Jalapa to take us to Macuspana. These animals were so wretched that we rejected some of them, and lost much time in finding others. Then, too, our pack saddles were new, and had to be broken in. After much talking and other delay we at last got underway. Two Indians on foot guided us along a fairly good road.

We were still in the plains of Tabasco, but about midway to Macuspana we got the first glimpse of the Chiapas mountains. They lay in the distance beckoning us to come nearer, and warning us that soon we would be working hard to conquer them.

D.Lat

Chapter VI

ALONG THE FOOTHILLS OF CHIAPAS

Macuspana is a long street of white-washed houses, a Plaza furrowed with trenches dug by rebels and federals, and an old Spanish church with grass growing on its roof and small bushes clustering on the balcony. It was in Macuspana that the Frenchman, Simon Sarlat, well known in Tabasco history, first discovered oil. He brought to the town the first steamer the "Pennsylvania," which came up the river in 1881. He owned the land where the Aguila Oil Co., has drilled for a quarter of a century, getting oil, but not in profitable quantities. But before all, Macuspana is the home town of José Rovirosa, indefatigable student, and one of the few serious scientists of the State of Tabasco. Here he lived, and here he wrote his pamphlets and books on the history and botany of the State. One of these pamphlets called "Informe sobre la Isla de Priego," printed in an edition of 500 copies by the Secretaría del Fomento, is now among the rarest of papers on Tabasco. In Macuspana he commenced what he intended to be his life work, a history of Tabasco, only to complete 31 pages before his death.

It was on our program to search for information about Rovirosa, and we therefore visited Don Manuel Rovirosa, brother of the scientist. From him we gathered a little data on the Rovirosa family. We learned that José Rovirosa, grandfather of the present Rovirosa, was Spanish Captain General of the State, and wrote the State Constitution in 1824.

The father of the present secretary of education of Mexico, Sr. Puig, published a small paper called "Eco de la Sierra" in Macuspana. Another newspaper was also published by Natividad Rosario, nicknamed Bato Rosati. This latter paper was called "El Onze" and came out about 1880.

In 1881 the first steamer reached Macuspana. We were present when the marvel of marvels, the first automobile, an old dilapidated Ford, ran up and down the one and only street of the town, to the amazement of the grown-ups, and the joy of the kids. That day Macuspana felt its position established among the great cities of the world.

We took up quarters in the house of Don Limbano Ruiz, collector of taxes, and proud possessor of three handsome daughters.

Since we left Comalcalco we had continuously been trying to buy saddle and pack animals but without success. To hire animals was getting too costly, so we gave up all hopes of getting mules, and commenced buying horses. All kinds of old nags were dragged up before us when it was rumored in the village that the foreigners were going to buy animals, and prices went up rapidly. We countered by pretending to be in no hurry to leave town, rejecting several horses, offering one-third of the price asked, and using "muleteer" language. And what a delightful time we had! At last we managed to collect seven fairly decent horses.

There were many other things to attend to. We needed workmen to labor in the ruins at Tortuguero, near Macuspana. The president of the League of Workmen appeared. He told us that we must take our labourers from that league. The members of his organization were all town "boys," who did not know where the ruins were supposed to be, and wanted $3.00 a day for doing nothing. Politely we refused this assistance, and secretly sent a messenger to the Indians at Tortuguero, advising them of our coming.

Then we had to secure a guide for the journey, a man who could take care of the animals and equipment and whom we could trust. Two men were recommended. One was a Mexican named Eduardo, who formerly had acted as police in the oil camp. He was known to be a good shot and somewhat of a bad man, which is always a protection to the employer, as people are afraid to tackle a character of that sort. The other, an old Indian from San Fernando village, was named Lázaro Hernández Guillermo. This man was very highly recommended as trustworthy and steady, and we therefore sent for him.

Enter Tata. He came walking slowly down the village street, a broad-shouldered man with excellent Indian features, dressed in sandals, blue cotton trousers, a white cotton shirt, and a broad-brimmed Mexican straw sombrero. He was told of our projected journey, which might take him through the United States back to his home and might last 3 or 5 months; that we would take him on for trial as far as Palenque; and that we would pay him $50.00 a month. He answered that he liked to travel. He had a wife and two children, and would go out to his little house and say goodbye to them. Then he asked when we were leaving, and on my saying "tomorrow," he answered, "Está bueno," "that's all right." The contract was closed.

Next morning Lázaro arrived with his traveling equipment packed in a small straw mat, ready, as far as he was concerned, to travel around the world.

CUSTOMS OF SAN FERNANDO

The Indians of San Fernando, Lázaro's village, and of its neighbor, San Carlos, have managed to preserve many old and unusual customs, little known to the Spanish speaking people who surround them. They speak a dialect of Chontal, called Yocotan (See Appendices III and IV), which is closely allied to Maya.

Of all this we had no idea at the time we hired Lázaro to make the trip with us. Slowly, he began to unfold, as he heard us questioning the Indians in Chiapas concerning their ways and beliefs, until finally, he said of his own accord that he could tell a thing or two in that line himself. On our way back to New Orleans, from Guatemala, I shared the same cabin with him and there and finally in New Orleans he gave me the following notes.

The old native costume has nearly disappeared in San Fernando, the only thing that remains is a white sash for men, woven by the women. They do also make plain, black pots, of a jug shape with one or two handles. Lázaro admired very much the pottery at Amatenango in Chiapas, and took back a drawing of a large jar, to be copied by his sister, who is a potter. He said that she would be able to make the jar, but could not copy the decoration.

The practices attending birth are as follows: When the mother begins to feel the pains, they send for a midwife, an old woman known for her ability. They give the mother a medicine compounded of an herb,* aluzena, which is bought in the stores, a fruit called arumero, almuzcad, manzanilla (Helenium Autumnale), brown sugar, and honey. Letting her rest at moments, they keep her moving around as much as possible, that the child may not get twisted. ("Para que no se aplumbe la criatura.") They anoint her stomach with oil and an herb called iguera (Ricinus Communis?) and warm it with an earthenware pot full of coals. At the end they let her lie down. If the mother has trouble in giving birth, an herb called hormiguera is ground up green, fried in oil, and put on as a plaster.

When the child is born, the natal chord is cut, tied up, and the end burnt with a tallow candle. The midwife bathes the baby in oil or warm water, and wipes out its mouth with cotton and fine oil. It is then well wrapped up, put to bed, and fed some herb tea with a piece of cotton.

The regular Catholic baptism is given by the priest.

As with most Indian tribes, marriage has little religious significance. When the young man thinks that his chances with the girl

*Owing to the fact that we have no specimens of these herbs, only a few of them could be identified.

are pretty good, he curries favor with her father by giving presents. Some times, however, if the boy is very subject to his parents, or reluctant to make a match, his parents will do the selecting for him, and his father will make the presents to the girl's father. Much depends on the temper of the children. After a few visits to the prospective father-in-law, the great question is put. He then, according to etiquette, delays—the girl is too young, she must choose for herself, she is a very good daughter to him, and so forth. All this indicates a desire for more gifts. Again he protests, saying that his daughter does not wish to marry. So it drags on for two or three months, a formal courtship of the father. The couple most interested, meanwhile, have probably done their part of the arranging during the evenings, at the village well, or down by the river.

The girl's mother finally asks her if she likes the boy, and tells the father. Then they accept the offer, setting a date a few months off.

The boy gets together the furniture and builds a house. He buys the material for the girl's trousseau, which she makes up. More presents are made to the family, of cacao, aguardiente, corn, and food. The couple registers according to Mexican law, and after the fortnight's wait required by it, live together in her parents' house until their own house is finished. If the boy is poor and the girl's family rich, he may be required to work for them for a while.

Funeral ceremonies are very simple. The corpse is buried in its clothes, wrapped in a mat. A singer called *ak 'En'tesa'* is hired for three pesos to sing in the grave yard on the night of the burial. Those of the family who know the appropriate prayers, pray at intervals for nine days thereafter. When a child dies, the praying is accompanied by music for its benefit. Mass is said for the soul by the local priest.

Their mythology is dying out with the older men; Lázaro had heard very little of it. He said that there were seven heavens, reached by a ladder, and that the highest was the most holy. This is an old Maya idea. After a great flood, *noh-lup,* god made new men, all the former ones having been killed. The rest of his material was Christian.

Most of their religion centers around the church, and their Christianity is real. They pray to the saints, and to the souls of the dead, *a-tcime'-lilva.* The usual procedure is to kneel down in the church, pray for a while, rest, pray again, and so on, "until they get bored."

They retain, at the same time, a number of beliefs carried over from pre-Christian times. The more conservative Indians make offerings to the guardian of the corn field, *oi-yum'-kap.* This they

call "paying the account." (*ya kE-subé' kE-cuenta,* now I pay my account). They offer corn wine and aguardiente, and burn incense in an earthenware vessel. When they go to gather the harvest, they notify the guardian, and pray to him, making an offering of the first fruits called *tcux'hilwa* or *atcumpom.* If they do not thus win his permission, he may seize their soul.

The medicine men, or shamans, *ah-tsak,* have great power, both as physicians and as magicians. To become a shaman, a young man applies to an old practitioner, who feels his pulse to find out if he is strong enough. If he should not be, the knowledge would drive him crazy. For twenty years after beginning his initiation, he must observe celibacy, after that he may marry. The shaman is paid if he cures, only. He must respond to calls at any time. His pay depends on the length of time required for treatment. Most of the shamans are very well off.

When called on to cure a sick man, the shaman asks permission first of the saint of the house. He calls only on the Christian gods. Aguardiente, balché (corn wine), and cholote (a chocolate drink) are placed on the house altar. He takes the sick man's pulse, and wafts incense over him, then begins to pray. (Lázaro gave the prayers in Spanish):

"Jesus, Jesus, en el nombre Dios del Espiritu Santo, si es viento de los brujos, si es viento de los echiceros, voy á hojear (?) fuegos que tiene en la cabeza"—"Jesus, Jesus, in the name of God of the Holy Ghost, if it be a wind from the magicians, if it be a wind from the sorcerers, I am going to drive off fires that he has in his head."

Then they call on the different saints, and enumerate the direct causes of the disease:

"Si espantó de culebra, si espantó de perro . . ."

"If he was frightened by a snake, if he was frightened by a dog . . ."

And so continue praying "de largo."

The beginning of the prayers makes the pain run around, then the continued praying calms it. They lance the place that hurts with a flake of glass chipped from a larger piece with a single blow of a corn sheller, after the old manner of flaking obsidian. It may be mentioned here that artificial glass has replaced obsidian all over Southern Mexico, where the volcanic glass used to be imported in huge quantities in pre-Columbian times. If the shaman lances a vein, he draws the blood by sucking through a cup made from a cocoanut, with a hole in the bottom of it.

They do not lance the head if the pain is there. Instead a head band is applied with a poultice of oil or aguardiente with camphor, and if needed, herbs scalded over the coals, mixed with oil and applied hot. The patient is given herb tea, and a jigger glass of aguardiente twice a day.

If any medicine is left over from the treatment, it is bottled with aguardiente for future use.

A survival of old Maya superstition appears in the insistence on drinking during the treatment, and in all a shaman's actions, before a cure is begun, a demijohn of aguardiente must be provided. This the shaman customarily shares with anybody who drops in, and even with the patient, if he "knows how to drink." That means, if he has learned to drink when he was young. If he has not, it would be very dangerous should he begin late in life. When gathering their medicines, the shamans go out into the woods alone, and carry aguardiente in their canteens instead of water.

This much for their doctoring, but they have other and more sinister powers, to be used against their enemies. If a man suddenly sees a snake and is frightened, if, coming home at dusk, a dog startles him by running swiftly across his path, if he has dreams of terror, then he knows that the witch doctor is out in the woods, praying to trap his soul, and he has need of another shaman to come and pray to many saints on his side.

He who is laying the curse sets up three crosses in the woods, of which the central one is the biggest. In a hole in front of each, he offers food, corn wine, and aguardiente, with bowls of posole, thriftily watered. There he kneels and prays, calling on the name of the one whose soul he wishes to catch. This is repeated for eight days. Then some of the food is offered in each of the four directions; some of the aguardiente sprinkled with a corn husk, also in the four directions, and on the crosses. He then drinks the rest of the aguardiente.

A free translation of the main part of the curse follows. The sorcerer calls on the "Great Men" and "Great Women" of all the places he can think of. (See Appendix IV, Text I).

"I am going to capture a soul, now gods of the Earth, and our mothers of the earth, here, today, now, this man's soul. I have my box here, I came here for that, bring me here his soul, fathers. I have brought food for an offering to you, our fathers, the big Men, gods of enchantment. The great Ones of San Cristóbal, the great Women of San Cristóbal, the great Men of Comitan, the great Women of Comitan, the great Men of the mountains, the great

Women of the mountains, the great Women of the South-East Wind, the great Men of the South-East Wind; now we call ye, come ye here now; the great Women of Encanto, the great Men of Encanto, the great Magician-Spirits of the South-West Wind, the great Magician-Spirits of the North Wind. Here are offerings, here is rum, here is food, here is wine, here is food that I brought; come ye to the great sacred table."

By noon our animals were saddled and with both Eduardo and Lázaro as guides, the first pack team owned by Tulane University trotted out of Macuspana. Hardly had we struck the trail before a heavy shower began, and when we reached the banks of the Macuspana river, the rain was coming down like water out of a fireman's hose. It was a dirty job to unload the animals. We, they, and our packing cases all slid down the steep bank of the river to the water's edge. Indians ferried us over in a large "dugout" canoe. By the time we had got our equipment up in a hut on the other bank we were covered with mud from head to heel, and decided to stop right there over night. We hung up our hammocks in the large main room of the hut, got dry clothes out of our boxes, and gladly accepted a drink of warming rum from our Indian hosts. Two young and pretty Indian girls watched our toilette through cracks in the stick wall, and afterwards got much amusement in watching La Farge make corn beef hash on their fireplace.

Out of the morning mist loomed the Macuspana mountain ahead of us. This mountain is one of the outposts of the Chiapas Mountain Range, which runs from the northwest to the southeast. The main geological fault lines through Chiapas run in this direction. The Usumacinta River, which forms the boundary between Mexico and Guatemala, is an exception. It runs at right angles to the main bearing.

The Macuspana Mountain gradually rises in the northwest out of the Tabasco plain, and ends near Tortuguero in a vertical wall which is sometimes called Buena Vista or Gavilan Blanco. Right at the southeastern point of the mountain are located the ruins which we were to visit.

Before reaching the mountain we passed through a picturesque, narrow cañon which cuts through a low front range of hills. This range forms something like a natural wall behind which the ruins are protected.

Arriving at a small ranch house we found that our messenger had collected a gang of Indians ready for work. As we were hungry,

we ordered a meal to be prepared before we should visit the ruins. This took much time, and when it finally was ready we found that it consisted of the toughest "pollo" we had encountered on the whole trip.

The ruins at Tortuguero were first reported by a Mexican General, Ramirez Garrido,* who visited them in 1915. He gives a short description of them in his book, and launches the theory that they are the ruins of the town Tepetitán, where Cortes halted on his expedition to Honduras in 1524. The data on which General Garrido based his supposition is very meagre. Further research has disclosed that it is more probable that Cortes passed the town at a distance of about 20 miles to the north of Tortuguero, and did not even hear of the buildings, which then must have been abandoned and in decay.

In May, 1922, the writer was in Tortuguero, and there located a stela which Mr. Garrido had overlooked on his visit. A drawing of this was made and sent to Dr. S. G. Morley, of the Carnegie Institution of Washington. He read the two uppermost hieroglyphs as the date 1 Ahau 3 Kankin, end Tun 13, or in full Maya notation, 9-10-13-0-0, 1 Ahau 3 Kankin, or, according to Dr. H. J. Spinden's correlation of the Maya and Gregorian Calendars, January 21, 386 A. D.

To go into a detailed description of the Maya numerical and calendar systems would take us too far afield, and is outside the scope of this report. However, a short explanation, so that the reader may get an idea of the simplicity of the Maya numerals and excellence of their astronomical observations, may be in order. In astronomy the ancient Maya excelled, and it is only recently that through Dr. Spinden's and Dr. Morley's investigations, we have come to realize fully that the Maya were the foremost astronomers of the world at their time.

The simplest way of giving a comprehensive idea is to summarize a few facts:

The Romans used an elaborate system of counting with many signs: I, V, X, L, D, C, M, and did not have a zero, which made their counting very cumbersome.

The Arabic decimal system now in universal use has ten signs: 1, 2, 3, 4, 5, 6, 7, 8, 9, and 0, zero. These signs are grouped together in different positions, and their value depends on their position in relation to each other. Let us take an example: 1,328,897. Start-

*Garrido, Ramirez, 1922—Blom, F., 1923—Blom, F., 1924.

ing from the right and going towards the left we find the following values for the numbers:

1 times	1,000,000	equals	1,000,000
3 times	100,000	equals	300,000
2 times	10,000	equals	20,000
8 times	1,000	equals	8,000
8 times	100	equals	800
9 times	10	equals	90
7 times	1	equals	7
			1,328,897

We note that the values rise in the following order: 1, 10, 10 x 10, 10 x 100, 10 x 1,000 and so on. Our system is a decimal system, with the value of the numbers depending upon their position from right to left, in a horizontal line.

The Maya numerals have but two signs: a dot for *one,* and a bar for *five.* Two dots are two; three dots, three; one bar, five; two bars, ten. Two bars and two dots stand for twelve. They counted in groups of 20. Theirs was a vigesimal system. Just as we do, they gave value to their signs by position, but in a vertical line, counting from the bottom up with the lowest value standing at the bottom of the column. The number explained above in our numerical system would be written by the Maya as follows:

...	equals	8 times	160,000	or	1,280,000
—	equals	6 times	8,000	or	48,000
..	equals	2 times	400	or	800
....	equals	4 times	20	or	80
..	equals	17 times	1	or	17
					1,328,897

This system was used for counting objects such as cacao beans, jade beads, etc.

The system was modified for use in the calendar by dividing the solar year of 365 days into groups of twenty days each, as nearly as this could be done under the rules of the straight vigesimal system. This resulted in the division of the year into 18 months of 20 days each, with a five day week at the end of the year, giving a total of 365 days to a year.

This last five-day week of the year was considered evil by the Maya, and was thought to bring bad luck.

Our calendar count starts with the birth of Christ. We count backwards or forwards from this point. The Bible sets as the mythical date for the creation of the world the date 4004 years B. C. The starting point of the Maya time-count was a mythical date falling on 3,373 B. C., probably the date they set for the creation of the world. They counted time from this point in groups of 400 years, called Baktun, in minor groups of 20 years called Katun, in years called Tun, in months called Uinal, and in days called Kin.

Though the following example is not strictly scientific, it serves the purpose of popular explanation. Let us look at the Maya date found in the Temple of Two Lintels at Chichen Itzá in Yucatan.

Maya Notation.		Spinden Correlation
11-7-12-16-18 9 Eznab 11 Kankin.		May 19, 1109, A. D.
(11 Baktun)	11 groups of 400 years, plus	1 millenium, plus
(7 Katun)	7 groups of 20 years, plus	1 centenium, plus 0 decenium, plus
(12 Tun)	12 years, plus	9 years, plus
(16 Uinal)	16 months, plus	5 months, plus
(18 Kin)	18 days from the Maya starting point.	19 days from our starting point.

It is only the question of which calendrical system you have been taught to use. One is as simple as the other.

The Maya undoubtedly selected 20 as their first higher unit, because they counted both fingers and toes. Twenty was a number which, to them, represented the complete person. For example in the Tzeltal count, the number Che-Uinic, is equivalent to 40. Che means two, and Uinic, man; hence, the Che-Uinic signifies two men, or twice 20—that is, 40. The decimal and the vigesimal systems of counting by position are based on the same idea, and are different only in development. The sign Zero is essential in both systems, as it also is essential to any kind of elaborate calculation.

Professor Kroeber discusses the sign zero in his book "Anthropology," 1923, and we take the liberty of quoting him verbatim:

"It is interesting that of the two inventions of zero, the Maya one was the earlier. The arithmetical and calendrical system of which it formed part was developed and in use by the time of the birth of Christ. It may be older; it certainly required time to develop. The Hindus may have possessed the prototypes of our numerals as early as the second century after Christ, but as yet without the zero, which was added during the sixth or according to some authorities not until the ninth century. This priority of the Maya

must weaken the arguments sometimes advanced that the ancient Americans derived their religion, zodiac, art, or writing from Asia. If the zero was their own product, why not the remainder of the progress also? The only recourse left the naive migrationist would be to turn the tables and explain Egyptian and Babylonian civilizations as due to a Maya invasion from Yucatan."

We now turn to the calendar. This is the most outstanding feature of Maya science. By a combination of day-names and numbers and month-names, and numbers in connection with the time count from the beginning of their reckoning, the Mayas were able to designate a day in such a way that it could not be mistaken for any other day through a period of over 370,000 years. The Aztecs who came after the Maya picked up some of the features of the Maya calendar, but as they did not fully understand this magnificent system, they were unable to fix dates with any certainty except within their cycle of fifty-two years. This led to a complete confusion of sequence in their chronology.

The Maya astronomer did not concern himself with observing the sun alone. He took minute observations of the moon also, as well as of Venus, and other heavenly bodies. Those interested in the details of this calendar system are advised to consult Dr. S. G. Morley's book "An Introduction to the Maya Hieroglyphs," and the recent work by Dr. Spinden, "The Correlations of Mayan Dates." In this latter book Dr. Spinden gives his correlation between Mayan dates and the Gregorian calendar, which we follow here.

We venture to make two further points before resuming the record of the journey.

Astronomy is based on observations of the heavenly bodies. These observations have to be conducted not only throughout a lifetime, but through generations, and even centuries. The observations must be recorded so that they can be checked and corrected. Exact astronomy is not possible, therefore, without a numerical system and characters with which to write down the observations.

The second point we wish to make is that when the Spaniards arrived in Yucatan in 1527, they were using the Julian calendar, and as this was not astronomically correct, they were 10 days behind true solar time. It was not until 1582 that the Gregorian calendar was adopted. This means that the calendar which we follow today has not been in use more than 344 years. The Spaniards did not recognize the scientific abilities of the people they conquered. Not until a few years ago did we begin to understand that the Maya at the time of the Conquest used a calendar far superior to the Old

World calendar, and had used this calendar without interruption for more than 2,000 years. Two thousand years as against three hundred and forty-four years! This is certainly an amazing evidence of the skill of a so-called semi-civilized race.

Let us go a little further. We have records of astronomic observations in the Old World from a time before the birth of Christ up to 1582, when the calendar was perfected. We can safely say that it took the Old World over 2,000 years to reach the present calendar system.

Elsewhere in this volume we described our journey through the Tuxtla region and there had occasion to refer to the Tuxtla Statuette and to the fact that upon it is carved the oldest known date found on the American continent. This date is the year 98 B. C. That means that the Maya in 98 B. C., must have already perfected their calendar. If we assign the Old World 2,000 years in which to perfect their calendar, why not allow the Maya the same time? May we not imagine the Maya groping their way towards the attainment of the highest aboriginal American civilization, over a thousand years before Christ?

However, we must return to our description of the ruins of Tortuguero. At the foot of the vertical cliff of the Cerro de Macuspana, facing towards the northeast, lies a row of terraces and mounds built of rough limestone blocks without any mortar to bind them. Huge limestone blocks which have fallen down from the cliff lie scattered among the artificial mounds. The ancient builders availed themselves of the talus of the mountain in constructing their terraces, apparently without any attempt to orient the buildings to the cardinal points. The map (fig. 116) shows the main portion of the ruins. There are no standing buildings, but on several mounds walls are still seen. To the north we have Mound I, on which stands a wall. At the foot of the northwestern corner of this mound lies a squared limestone slab, 1.94 meters long, 85 c.m. broad, and 15 c.m. thick. In one corner this slab has a circular perforation. A stairway once led from the mound down to the Plaza on the eastern side, and in the middle of this stairway is a small terrace on which is located a circular undecorated altar, 1.16 meters in diameter and 25 c.m. thick.

On Mound II are walls badly ruined but indicating that here once stood a building probably with stone walls and palm roof. There is not enough debris to show that the building had a stone roof. Mounds III and IV do not show any signs of structures, but behind mounds V and VI we again find walls. These two latter mounds lie on the sides of a small Plaza, and here we find three

fragments of monuments, Monuments Nos. 2, 3, and 4. To these we will return later.

Going in a northeastern direction from the aforesaid small Plaza we climb down several terraces and badly ruined stairways until we reach a small hummock on which lies Stela No. 1. This is a stone column, 2.30 meters high and 65 c.m. broad. The back and sides are plain, but on the front are eight cartouches containing hieroglyphs. Under these is carved in low relief an animal, probably a jaguar, with somewhat humanized features. The hieroglyphic inscription reads as follows: 1 Ahau, 3 Kankin, End Tun 13. Morley read this as 9-10-13-0-0 1 Ahau 3 Kankin, which, according to Spinden's correlation, is January 21, 386 A. D. Further down the inscription we find an addition of 1 Tun, 14 Uinal and 10 Kin, which brings us to the date 9-10-14-14-10, 1 Oc 3 Yax, November 1, 387 A. D.

A1	1 Ahau
B1a	3 Kankin
B1b	13 Tun
A2a	?
A2b	End sign and hand.
B2	?
A3	?
B3a	10 Kin, 14 Uinal
B3b	1 Tun
B3c	1 Oc
B3d	3 Kankin
A4	?
B4a	7 ?
B4b	12 ?
B4c	8 ?
B4d	?

9-10-13- 0- 0 1 Ahau 3 Kankin (January 21, 386 A. D.)
1-14-10

9-10-14-14-10 1 Oc 3 Yax (November 1, 387 A. D.)

The glyphs are crude in form and undoubtedly were executed at an early date. Between the first date and the second are exactly 2½ Tzolkins, or 2½ rounds of the Maya Ritual Calendar of 260 days.

A crack runs through the center of the monument so that we were afraid of turning it up on the side and had to make photographs as best we could. At the same time a drawing was made which is given in Fig. 117.

Monument No. 2 was probably likewise a Stela. It lies on the small plaza which is in front of Mound No. VI and is carved in the form of a serpent's body. Top and bottom is broken off. On the remaining part are cartouches of hieroglyphs. On the front are five blocks of glyphs containing an Initial Series. On the back are

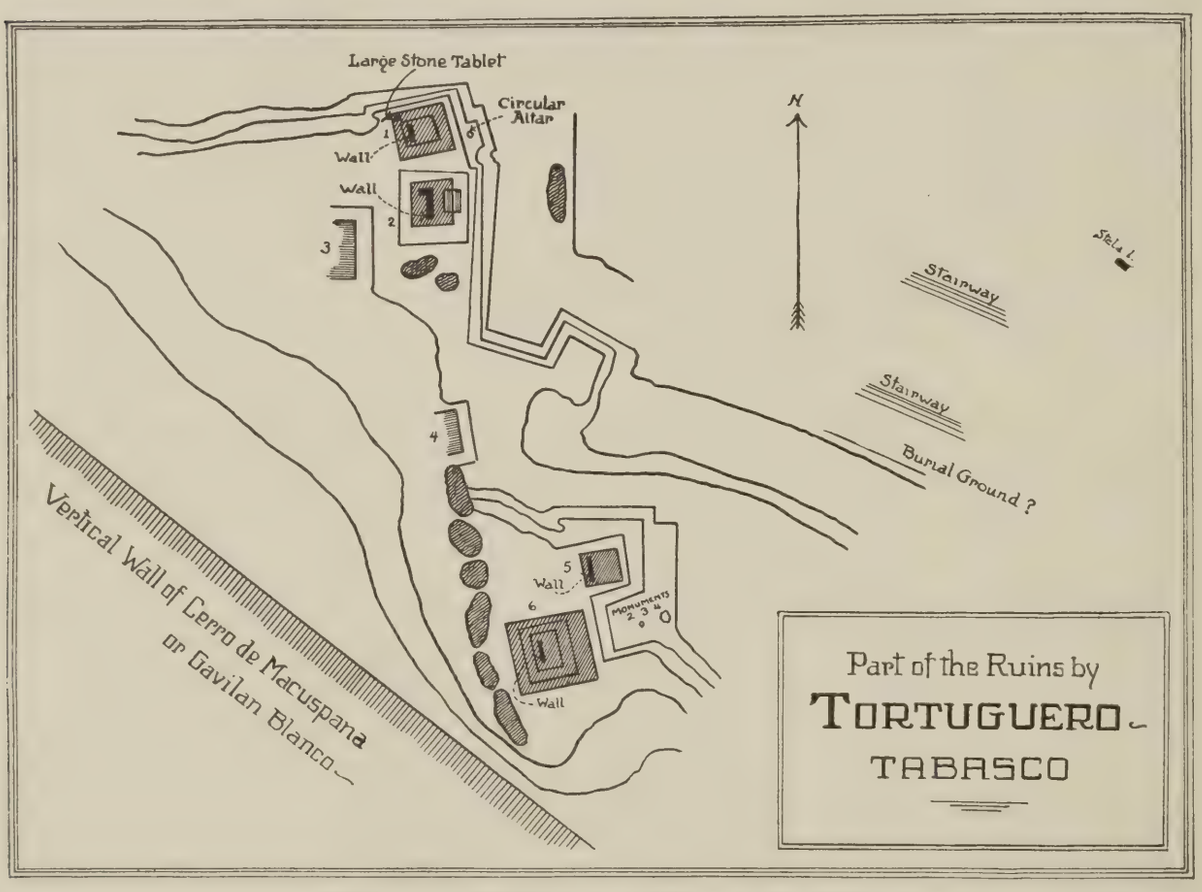


Fig. 116—Tortuguero, Tab. Map of the Ruins.

five more glyph blocks and the half of a sixth. The sides of the monument are carved to represent the belly scales and diamond design of a snake skin. This monument is 1.60 meters high, 30 c.m. broad, and 26 c.m. thick. The hieroglyphs are badly effaced. None the less it is plain that the glyph in A1 is an introducing glyph. In A2a there is a plain 9 Baktun. A2b shows 9 or 14 Katun. A2c is O Tun, and A2d O Uinal. This is followed by A3a which is clearly O Kin and A2b showing a 6 Ahau. This gives only two possible readings, 9-1-0-0-0 6 Ahau 13 Yaxkin, or 9-14-0-0-0 6 Ahau 13 Muan. The latter of these readings (February 3, 452 A. D.) is the

most likely and is the one suggested by Dr. Morley when he visited Tulane University, in October, 1925, to study the results of the expedition (fig. 118).

Fig. 117—Tortuguero, Tab. Stela 1.

Monument No. 3 is a human figure with the head and legs below the knees gone. Around its neck is a necklace. Its arms are held close to the body. From its girdle a sash hangs down in front. Apparently hieroglyphs were carved on the front of this sash, but they are now so badly weathered that they could not even be drawn. The remaining part of this figure is 1.10 meters high and 44 c.m. broad (fig. 119).

Monument No. 4 is a smoothly cut stone shaft about 1 meter high which used to stand on a small elevation on the eastern edge of the Plaza.

Though we made careful search, no monuments were located in the immediate neighborhood of the ruins. Those found gave us two dates, as shown above, one, 387 A. D., and the other, 452 A. D.; which proves that Tortuguero is an Old Empire city, contemporaneous with Palenque. Furthermore, it is the most western Maya city in which dated monuments have been found.

At the foot of the hillside on which the main structures are located are now a series of Indian corn fields. In these we found several minor mounds grouped around Plazas. On the ground were a large quantity of pot sherds. These were all of Old Empire type, and were fragments partly of pots and partly of clay figurines (fig. 120).

In a day's hard work we completed a rough plan of the ruins made by taking compass bearings and pacing

the distances, and we also made a set of drawings of the monuments. Then we returned to our Indian hut to make preparations for continuing our journey.

It was quite early in the morning of the sixth of May when we entered the trail leading in a southeasterly direction towards Salto

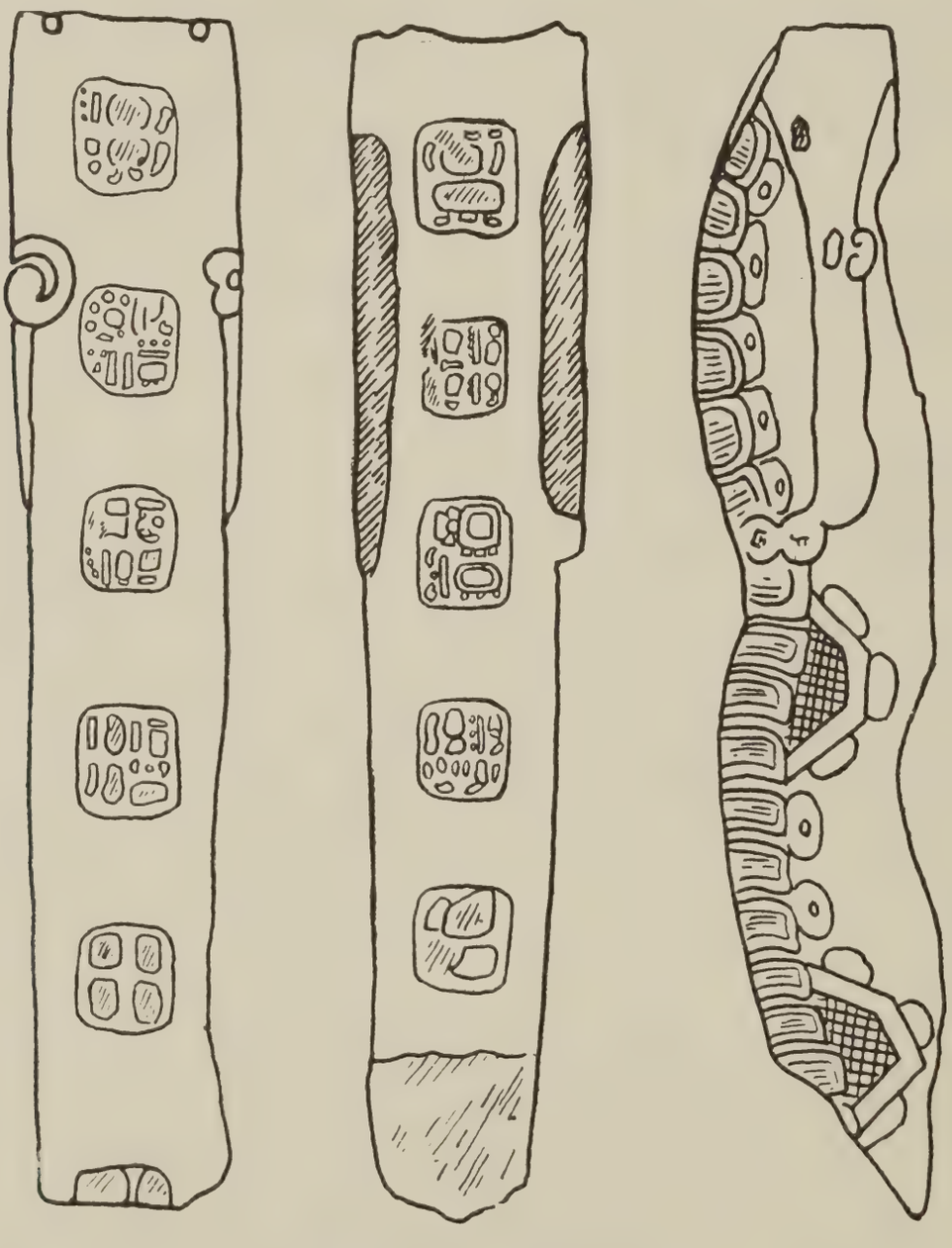


Fig. 118—Tortuguero, Tab. Stela 2.

de Agua in the State of Chiapas. At first we followed level ground. In the distance we could see the Cerro de Macuspana, and before long the real foot-hills of the big mountains came in sight. Our Indians told us that there were many caves in these mountains, and

that clay idols and potsherds had been found there. The most important of the caves is La Cueva del Zopo, the one we were headed for.

Fig. 119 — Tortuguero, Tab. Stela 3.

The trail led us up a series of narrow ridges, and winding in and out we followed these. At a settlement called Buena Vista we encountered all the inhabitants out in the corn fields, waging a fierce battle with great swarms of locusts. These pests were abundant, but now the Indians are learning from the Mexican Government how to destroy them. In some places we saw entire corn fields razed by them.

As the top of a sugar loaf mountain came in view to our right, our guide told us that the cave we were looking for was near it. At the settlement Rivera del Zopo, we acquired another guide who said he could lead us to the cave. He first took us through some appallingly thick undergrowth to a place where he proposed that we camp. But there was no water so we went on, and finally came upon a small corn shed close to a diminutive stream. As this place had shelter, though poor, and water, though little, we decided to stop. Our guide had a small hut nearby, and we tried to buy eggs and corn from him. The poor man had none, or at least so he said. He did not seem very pleased at our stopping so near his hut.

We reached this camp around noon, and as soon as we had eaten lunch we set out in search of the cave. The guide took us for an afternoon's walk over very rough ground. He brought us to a nearly vertical limestone wall under which were several small caves, but not the big one of which we were in search. We followed the wall for a long distance without luck, and finally returned to camp very tired, with our shoes and hands badly cut by the sharp limestone blocks we had crawled over in vain. We had contracted with the guide to pay him if he brought us to the cave, so when we told him "No cave, no cash," he grumbled a good deal, but finally sent his small son out to find a new guide for us for the following morning.

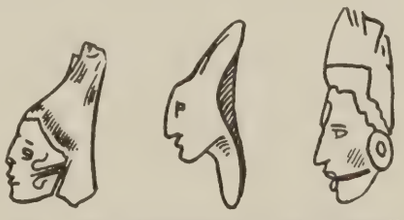


Fig. 120—Tortuguero, Tab. Small clay heads found in ruins.

Several years ago the Mexican Government Inspector of Ruins in Macuspana had extracted from the Zopo cave some large clay tubes with the faces of gods modeled on their surfaces. He also

found a large quantity of flint tools and fragments of small pottery vessels. The collection was shipped to Mexico City. As no data had been collected as to how the cave looked and under what conditions the find was made we planned a visit to this cave on our original itinerary for the expedition.

The roof of our small shack looked very leaky, so we covered it up with our rubber ponchos, and the "boys" curled up on the floor under our hammocks for the night.

In the morning our new guide appeared, and we were again led up to the limestone wall we had investigated on the previous day. At one place there was a very steep climb, and following him up this we came to a small natural terrace, and then to another vertical

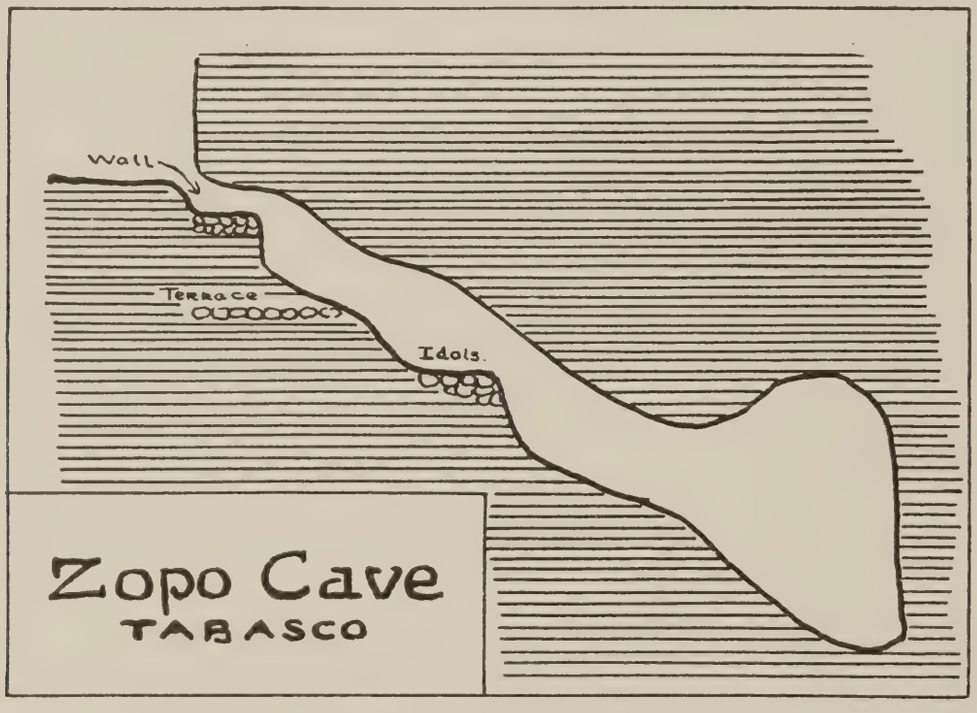


Fig. 121—Zopo Cave, Tab.

wall. There at the foot of this wall was a small hole, the cave we were looking for. Lanterns were lit, and we crawled inside. Soon we saw that the entrance had once been much larger, and had been closed up with a wall in ancient times. Inside were two terraces, and a steep descent to the bottom of the cave. It was on these terraces that the clay idols had been found. The first investigators had taken all the larger objects away, but left several fragments of pottery at the mouth of the cave. We also found a lot of sherds, all showing traces of blue paint, and some fragments of bones. Some of these were the shells of turtles and there were also a few splinters of human bones. The son of the first explorer, whom we had been

so fortunate as to get hold of, showed us where the idols had been found. He told us that they had also found part of a human skull with a few teeth, one of which had an inlay of jade (fig. 121).

Whether this cave had been used for burial purposes, or as a sanctuary to the mountain god is not easy to say. The first seems the more probable, as the entrance appears to have been entirely closed, and only opened quite recently by the washing out of some of the stones in the closing wall.

FIG. 122—Zopo Cave, Tab. Clay Cylinder No. 1. (80 c.m. high).

FIG. 123—Zopo Cave, Tab. Clay Cylinder No. 2. (76 c.m. high).

One cannot help wondering how many such sealed caves may still be found in the Maya area. It would certainly be interesting to find such a cave undisturbed by treasure seekers and pot hunters.

The three large clay cylinders found in the Zopo cave are all about 75 centimeters high, have a circular hole in the middle, are plain on the backs, with a face on the front. No. 1 shows a human face with a scroll typical of the God of the Number Seven, or seventh cycle (according to Spinden) over its nose. The eyes are

large and bulging, and on its head is a helmet composed of two grotesque faces of long-nosed gods (fig. 122).

No. 2 has the grotesque face of the long-nosed god as shown on the helmet of No. 1, with bulging eyes and open jaws. Various parts of the ornamentation is made by applying lumps of clay to the smooth surface of the cylinder (fig. 123).

The best preserved cylinder is No. 3. A human face is set in the jaws of a grotesque monster. The features of this face are well modeled, and a superficial impression is that of Mongolian features. By close examination one will see that the high cheek bones of the Mongoloid are lacking though the outside corners of the eyes are drawn up. We know that the ancient Maya considered it a mark of beauty to be cross-eyed, and it is the writer's belief that the artists who made this face intended to show that his model was cross-eyed. He attained this effect by letting the ball of the eye bulge a little towards the nose. On a second examination of the face, the mongoloid traits vanish, and there is no doubt but that the model was cross-eyed (fig. 124).

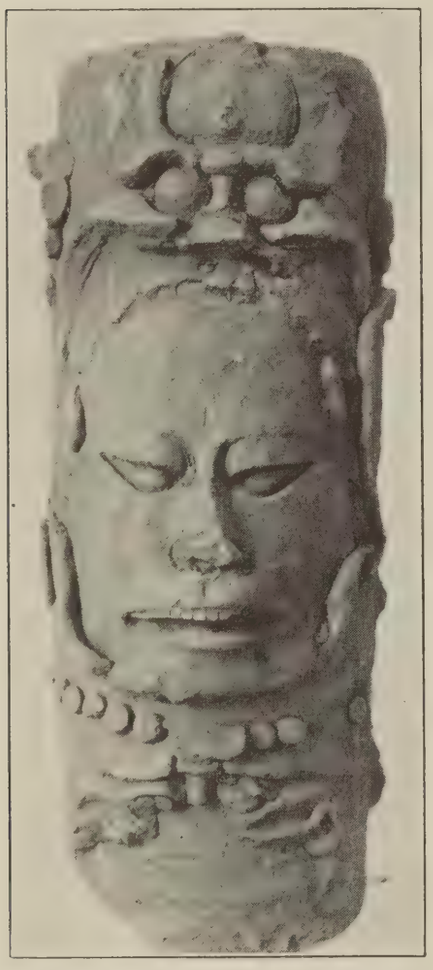


FIG. 124—Zopo Cave, Tab. Clay Cylinder No. 3. (80 c.m. high).

When we reached camp about noon our men had loaded the pack animals and after a hasty luncheon we again mounted and soon gained the main trail to Salto de Agua. We were still in the State of Tabasco. Not until we had passed through the Indian village of Pueblo Nuevo, did we enter the Chiapas territory. The trail led us to the Finca Lumija, and then along the banks of the Tulija River.

We were on the Camino Real now, recently cleared by the inhabitants, so progress was rapid, and soon the drilling tower of well No. 1, belonging to the International Oil Co., near La Crusada, loomed up over the bush. We rode past this, and up in front of the office of the German-American Coffee Company.

La Crusada is the general shipping point for Salto de Agua, a short distance away. It is the last point which the river steamers can reach during the dry season, and most of the products of the moun-

tain country behind Salto are shipped from here to Frontera on the Mexican Gulf.

The International Oil Company started drilling here some years ago, but have temporarily abandoned this location in favor of one further in towards the mountains. Our friend, Mr. C. A. Campbell, chief engineer of the company, had left word for us to come to the company's camp. Shortly after we received this message, he himself arrived to receive us. We left our animals and equipment in care of our trusty Lázaro, and rode through the town of Salto and along a good road built by the oil people. Here we felt that we were again in contact with modern activities. Trucks and tractors moved there on the edge of the wilds as if that were quite the normal and accepted order of things.

As we rode out of Salto we met the first Tenejapa Indians we had seen, sturdy and dirty mountaineers who had come down from their towns with cargoes of goods carried over bad trails on their backs. They were of great interest to us, as we knew that before many weeks we would be living among them.

Once in the oil camp, we made a bee-line for the shower. A bath in a bathroom was a luxury after swimming in dirty rivers. Then a splendid meal, and afterwards while the sun was setting, we sat on the porch of one of the bungalows and swapped yarns with our American friends.

Down on our left lay the Tabasco lowlands and to our right and in front of us lay range after range of mountains: Chiapas, the promised land of Ruins and Indians.

That night we slept in b-e-d-s covered with real s-h-e-e-t-s, and it took three calls for breakfast and much noise on a gong before we were willing to leave such comfort. After further luxury in the form of a huge breakfast we mounted again and rode down to Salto de Agua, to take up quarters with Don Federico Martens, a German trader. He has for years had a large store in Salto, and we intended to refill our somewhat reduced supplies from his stock. We also had to have all our animals shod, as we were now getting near the rocky mountain trails.

Don Federico is a large, jovial man. He at once placed his house and his supply of excellent Tabasco rum at our disposal. It is hard to say which of the two is the largest. In the new wing of his establishment we were assigned a room, the walls and furniture of which were entirely of thick, hand-cut, mahogany boards. On the porch were immense tables and chairs carved out of the roots of mahogany trees. They looked as if each weighed a ton or two.

From Don Federico we heard the story of the vicissitudes of the town of Salto de Agua. He came to this place many years ago when some American companies, "booming" the surrounding country, were advertising it as the finest rubber land in the world. There is hardly any doubt that it is good land for rubber, but the companies which worked then were more eager to sell shares than to plant rubber. Millions of dollars, the investment of credulous people who expected to get rich over-night, were thrown away at this place. Now all that remains of these lost hopes and many tears are the American names of certain plantations, such as Philadelphia, Iowa, and others.

After the "Robber" people, came the Coffee people, who seemed more in earnest. They opened roads and planted coffee, only to see much of their work lost in revolutions. In spite of unstable political conditions, these companies still operate, though they do not produce anything like the amount of coffee they had hoped to. Long strings of pack mules are constantly coming down over the mountain trails loaded with bulky sacks of precious beans.

Salto de Agua lies just at the point where the Tulija river leaves the mountains. Just above the town the river forms some rapids and water falls, and from this the town gets its name. In the country behind the first mountain range are huge tracts of mahogany land, and far up the Tulija lies the Finca Encanto, the headquarters of the Esperanza Timber Co., an American concern. We were to go to this place, but by another route.

One of the main trails from Tabasco to the interior of the Chiapas highlands goes through Salto de Agua, and travellers constantly pass through the place.

Our host, Don Federico, was a remarkable man, and has been in Mexico over 20 years, has read much, and loves to ventilate his theories, also to take a drink. There is always a huge demijohn of Habanero (Tabasco rum) at hand, and he has no small glasses in the house, so we thought it best for our health to leave the next day.

Our friend, Mr. Campbell, of the International, was on a trip of inspection of the company's camps at Salto and Palenque. As we were going the same way he decided to join us. With his five animals and our seven we crossed the Tulija river during the morning. One of our animals turned a somersault down the slippery river bank, and—fortunately—landed unhurt on all four feet right at the water's edge.

For some hours our trail ran parallel to the mountains. Then we came out on an open savanna, and at last reached the dilapidated bungalows of the once infamous rubber plantation, Iowa.

We burst right into the midst of a celebration. The Mexican ranch foreman was celebrating his own saint's day chiefly by dispensing frequent drinks to some friends, and though he was a perfect host, he did not forget to include himself each time. The house was decorated with streamers of coloured paper. We were invited to make ourselves at home in one of the rooms, but owing to the proximity of the party, we preferred to take up quarters in an abandoned, half-rotten storehouse. It would not do to hurt the host's feelings, so we had to swallow a little of a liquor which made us realize why certain kinds of rum are called "firewater."

After having settled in our quarters and had a meal, we amused ourselves watching our host and his besotted guests trying to shoe a horse. They swore profusely, whipped the poor beast, got kicked all over the place, and finally had to give it up.

For years there have been rumors abroad that a mystery city lies buried in the forests not far from the Finca Iowa: hence our visit. From the somewhat incoherent conversation of the ranch foreman we understood that, years before, he had been in a large stone building some miles distant from the ranch house in the tropical forest covering the mountain sides south of us. He also said that there was a stone tablet on the back wall of one of the rooms and that signs like those at Palenque were drawn on this tablet.

Late in the evening we got hold of a guide, who confirmed the information we had received from the foreman. Hopes therefore ran high when we got up the next morning about 5 a. m., hurriedly swallowed our breakfast and jumped in the saddle. A ride of one-half hour brought us to some Indian huts near La Colmena where we left our horses and secured some men to cut bush for us at the ruins. In a canoe we paddled a short distance up the Michol, a small river which begins near Palenque, runs along the foot of the first mountain range, and empties into the Tulija, a little below Salto de Agua.

We left the canoe at Brinca Zoro and proceeded on foot. It was a tough climb up to the hut of an Indian named Florencio Ramirez. We were eager to reach the mystery city, eager to see if the story of the inscribed tablet was true. At the hut we got a drink of water and again dived into the forest. About eight o'clock we began to see signs of man's handiwork—crumbling walls and terraces, and then we came in sight of the southern end wall of the temple. We had been walking fast, so we rested for a moment. It was a moment of high tension—the temple was there. Now, what about the tablet?

Then we broke our way through the bush to the front of the building. Alas, we were too late! Not many months before a monstrous

cedar tree had fallen right on the center of the temple. The main door and the whole central part of the building had been crushed under the weight of the forest giant, and the tablet lay buried under many tons of stone and mortar.

It was no use crying over spilt milk. So we at once got out compasses and measuring tapes, and while Mr. Campbell, whom we had dragged along to share our joy, and who now shared our disappointment, supervised the work of the Indians busy clearing away the bush, we set to work to measure the temple and make a ground plan of the ruins (fig. 125).

The group includes only one standing building, which faces east. It is located on an upper terrace, from which a stairway leads down towards the north, to a lower terrace. In ancient times the temple

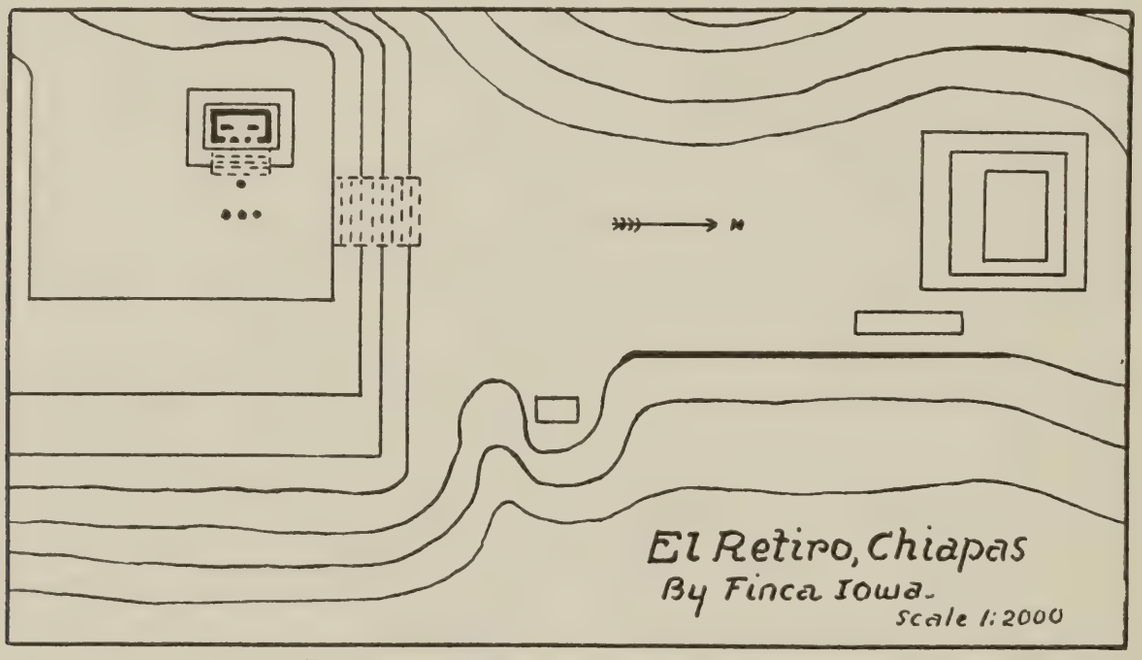


Fig. 125—El Retiro, Chis. Map of the Ruins.

must have looked out over the lowlands now entirely hidden by forest. The lower terrace ends towards the north in a large truncated pyramid, facing south, on top of which are the ruins of another structure.

The temple is of the type common to that region. Its walls are very thick. Inside, are two parallel galleries running north-south. The façade of the building is divided into three doors by two square pillars on which were once figures in stucco relief. Inside the back room is a separate small building, a sanctuary, similar to those in Palenque. It is inside this sanctuary that our guides said the inscribed tablet was seen. It occupied the front of a small altar,

which they described as something like a writing desk (como un escritorio). They said that there were two rows of signs.

We removed some blocks of stone, hoping to be able to penetrate into the interior of the sanctuary, but without success. A small door was disclosed on the northern side of the sanctuary, but otherwise the interior was blocked up by debris. The destruction wrought by the big tree had been very complete, and it would have required several days' work and more men than we had, to expose the whole of the sanctuary.

While removing some of the debris we found two corn grinding stones and one pestle of the type common in Maya ruins.

The ceiling of the corridors formed a corbelled vault, and their span is somewhat larger than usual, as will be seen from the drawings given in Fig. 126. Beam sockets are found in the slopes of the vault, and the capstones are very broad. The walls are covered with nicely polished stucco.

Several air holes, or small windows perforate the exterior walls. All these have been closed by slabs from the outside. Those which are open now show signs of once having been closed.

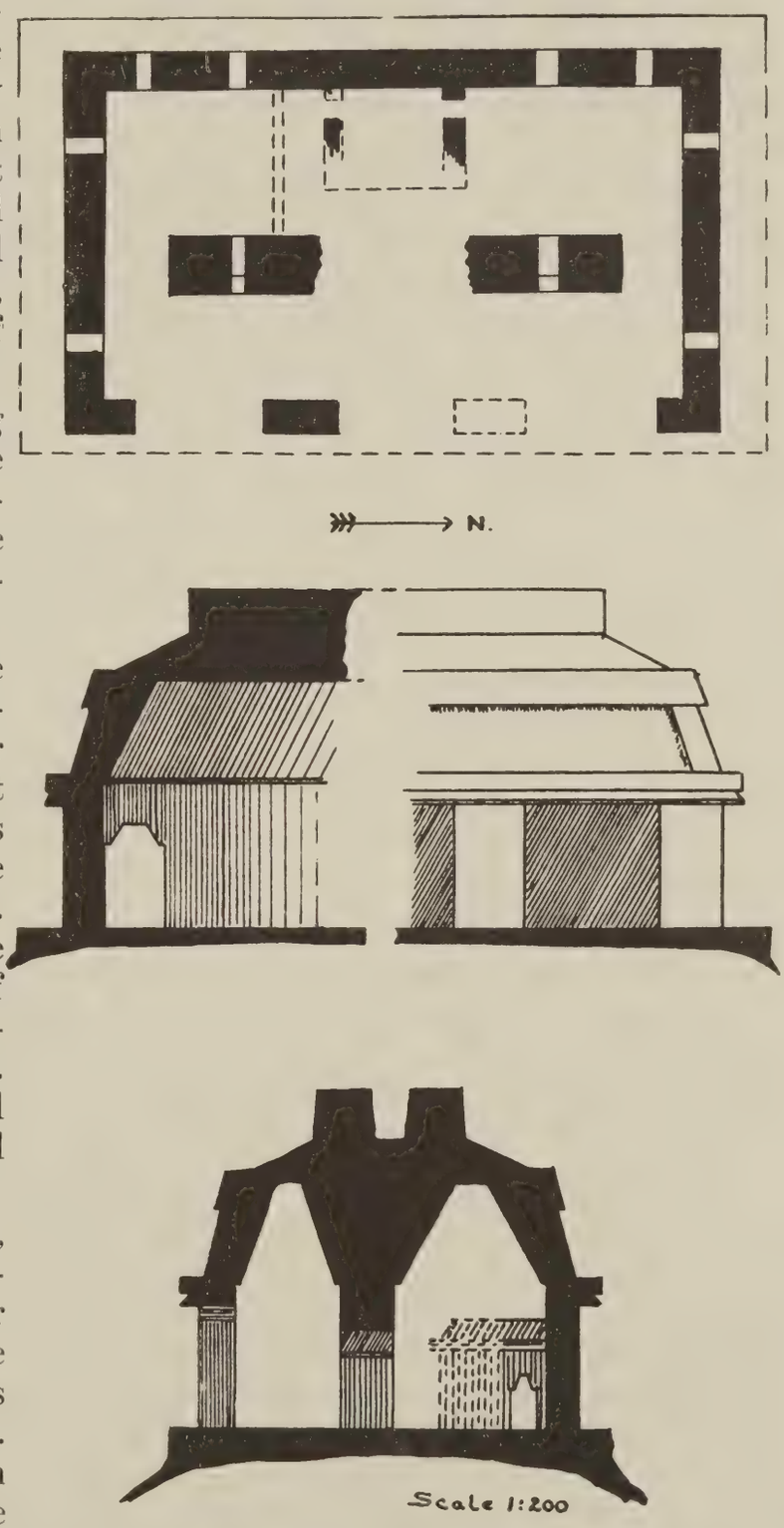


Fig. 126--El Retiro, Chis. Ground plan and section of the Temple. Scale 1:200.

The roof slope is of Palenque type, and on the center of the roof stands a roof-comb, 1 meter high, and 2.25 meters broad at the bottom. This comb is slightly narrower at the top and is formed by two parallel walls.

From the entrance to the temple a stairway leads down to the upper Plaza. At the foot of this stairway is a small circular altar, without carving. Three more small circular altars stretch in a row across the middle of the Plaza.

It was very disappointing not to find any inscriptions by which we would be able to date the building. A future explorer, who is fortunate enough to have a permit from the Mexican Government to excavate the building may have more luck than we did. By comparison with other buildings in the surrounding area, we are inclined to believe that the temple was not erected before 9-12-0-0-0 of the Maya count. In construction it is very similar to the Palenque temples, and the width of the galleries rather indicate that it was built at a somewhat later date.

The Indians call this place El Retiro, so we gave this name to the ruins, though we really felt more inclined to name them El Engaño, the disappointment. The ruins lie S-78-E from the finca.

One of our guides said that some large pyramids are situated several leagues further into the forest. He had been there once, but had not seen any buildings. Should the entire mountain range between Salto de Agua and Palenque be explored, several highly interesting discoveries would undoubtedly result.

Having completed our work at this interesting spot, we returned to the ranch and made preparations to leave that same night. Between Iowa and Palenque Village, our next stop, are large savannas, with clusters of bush and low trees. During the dry season it is an extremely exhausting trip both for men and animals across these savannas during the heat of the day, so, as there was a full moon, we decided to make the journey by night.

The ranch foreman had now sobered up. About 8:30 in the evening we mounted. He led us out to the main trail. It was pitch dark. As soon as we came to the spot where the trail plunged into the forest, the amiable foreman took his departure and left us to shift for ourselves. We advanced step by step, depending upon our animals to find the trail. Presently we came to a telephone line which we had been told to follow. That led us into some bad underbrush, but the moon commenced to climb up over the horizon, and its light helped us to find our way through to the main trail between Salto de Agua and Palenque. From then on it was easy going. The

trail was lined with thick bush and large elephant-ear plants, which took the most fantastic forms in the light of the moon. It is always pleasant to travel by moonlight; the surroundings are merged into a vague, olive-green obscurity, in which the outlines of things are beautifully blurred. Small animals hunting at night often came out on the trail, followed it for a little way, became frightened, and disappeared again into the black bush. For the most part it was cool, and in low ground, even chilly. Dew glittered on the leaves, and at times there came from the savanna a breath of warm air, often heavy with the smell of burnt grass.

About midnight we reached the open savanna. The trail lay before us like a white ribbon in the yellow, dry grass. We advanced slowly, as we knew that we had a long trip ahead of us and did not want to exhaust the animals.

Two of our boys were supposed to know the trail, but they promptly misled us. We wandered along for some hours, not feeling in the best of humor, until we rode up to an Indian hut, and finally succeeded in rousing an old Indian. He gave us our direction and told us that we had 8 leagues to go before we reached Palenque Village. Again we got side-tracked, and had to return to the same hut before we got the correct bearings. After an hour's ride we once more were in doubt of the trail, and luckily found another house. On our call three white-clad ghost-like women came out. They told us that there were 8 leagues to Palenque, and glided in front of us to a place where we could see the main trail shining white before us.

It was quite cheerful to hear that we had made no progress during the last hour's ride.

On we went. We were getting very tired, having been on the move, working and riding, since 5 o'clock the previous morning. Often we dozed in the saddle to wake with a jerk when our animals stopped to nibble the grass. We began to see strange things. Bushes took the oddest shapes. We dismounted and walked for a time and that helped somewhat to overcome the desire for sleep.

A faint light began to show on the eastern horizon. We met a pack train coming from Palenque. They told us we had 7 leagues to go. Were we making no headway whatever?

Moonlight changed to day. The great Don Juan mountain went through the most magnificent changes of colour—mauve, violet, and finally the golden morning sun brought out the deep green of its forest-clad sides.

Sun and warmth seemed to infuse new life into our wearied bodies and into those of our animals. Now and then we got a

glimpse of a tiny white spot to the east of Don Juan on the mountainside. It was the Temple of the Cross at Palenque ruins. Still the village did not come in sight.

Then we began to meet men going to work in their fields. At last, about 9 o'clock, we saw the church of Palenque.

We rode direct to Ernest Rateike's store. He came out and we greeted him with stiffest of bows—not that we did not like him—far from that—but we really were unable to greet him more gracefully, having been in action for twenty-eight hours. We could scarcely bend our rigid backbones.

We craved food and sleep. The available food consisted of a can of salmon, some crackers, and a bottle of pop. While the boys unloaded the pack animals La Farge took a nap, squatting on the points of his spurs.

Late in the afternoon we came back to life, refreshed, but ravenously hungry. On waking we received a piece of news which made us forgive all the hardships of the previous night. It seems that when we lost our way, and wandered about so wearisomely in search of the main trail, we had escaped a grave peril. Only a short distance further on along the main road bandits had held up a merchant and stolen his money and mules. As the old saying goes, nothing is so bad that it is not good for something.

Chapter VII

PALENQUE

Certainly no one would go out of his way to reach Palenque Village were it not for the magnificent Maya ruins lying close by. The village consists of two rows of houses on either side of a broad main street leading to a terrace where lies the old Spanish church.

The name Palenque is Spanish, meaning "stockade." It is told that the village was originally founded at some distance northwest of its present location, and that the Indians at the time of the Conquest moved their village because they were molested by bats and ants. The Spaniards began to construct a church at the first site but abandoned this to build part of the present church. One of the bells hanging on a small scaffold outside the church is dated 1573.

Scarcely any group of Maya ruins has been visited and described as often as the ruins near Palenque. Though several writers insist that Cortes saw these temples, there is little to prove their assertion. Not until around the year 1750 were there rumors of a fantastic ruined city lying in the mountains near the village. In 1773 one Ramon Ordoñez y Aguilar sent his brother from San Cristobal to explore the ruins. A description was made and sent to the Viceroy of Guatemala, for Palenque in those days pertained to the kingdom of Guatemala. This description was later found by Brasseur de Bourbourg, who published it under the title "Memoria relativa a las Ruinas de la Ciudad descubierta en las inmediaciones del pueblo de Palenque."*

In 1784 the ruins were studied by José Antonio Calderón and in 1785 by the architect Antonio Bernaconi. Based on their explorations the royal historian, Juan Bautista Muñoz, made a report (1786), the original of which is now in the British Museum in London, together with the drawings by Bernaconi.†

The first extensive exploration and description was made by Antonio del Rio in 1786, but his report was not published until 1822, and then not in a Spanish speaking country, but in England.‡

*Brasseur, 1866.
†Spanish MSS. Add. 17571.
‡Rio, Antonia del, 1822.

Again in 1807 the French Captain G. Dupaix, with an artist, Luciano Castañeda, visited the ruins. His description and some of Castañeda's drawings were published by Lord Kingsborough, and a complete report with all Castañeda's drawings appeared in 1834 in the large work "Antiquités Mexicaines."*

Frederick Waldeck arrived at Palenque ruins in 1832 and stayed two years, studying, excavating, and drawing. Not until 1866 was his work published, with an introduction by Brasseur de Bourbourg under the title "Monuments anciens du Mexique." Thirty-five of the drawings to this large work are of subjects in Palenque.†

In 1840 the ruins were visited by the American explorer and writer, Stephens, and his artist friend, the Britisher, Catherwood.‡

Eight years later, in 1857, Charnay paid his first visit to the ruins, returning in 1872 to make a more careful investigation.§

Foremost of all explorations stands the work of Alfred P. Maudslay. His photographs, drawings, and plans, published in "Biologia Centrali Americana," are a standard for this type of work, and should be followed by future explorers in the whole area.

After Maudslay's exploration the ruins were studied by the German, Seler; the Austrian, Maler; and the American, Holmes. Seler and Holmes published the results of their work. Of Maler's labours only a series of photographs are existing. Short visits were paid by other scientists, among them Tozzer, Spinden and Morley, and in 1923 the "Direccion de Anthropologia" of the Mexican Government sent the writer to Palenque to determine what could be done for the preservation of the ruined buildings. Much new data were collected, and as these have not yet been published, some of the results of that expedition will be given in the following pages, through the courtesy of the Mexican Government. Constant reference will be given to Maudslay's plans and maps, and a short description will be made of the main buildings, in order to give an idea of the magnificence of this ruined city, and as a background to the discoveries of the Mexican Government Expedition of 1923, as well as those made by the Tulane Expedition of 1925.

*Kingsborough, 1831-48, Vol. IV., Page 294—Lenoir et Warden, 1834.
†Brasseur, 1866.
‡Stephens, 1841.
§Charnay, 1863—Charnay, 1881—Charnay, 1885.

EXTRACT OF THE REPORT RENDERED TO "DIRECCION DE ANTROPOLOGIA, SECRETARIA DE AGRICULTURA Y FOMENTO" OF THE MEXICAN GOVERNMENT IN 1923

UNDER DIRECTION OF DR. MANUEL GAMIO

From Palenque Village the trail to the ruins runs in a south-westerly direction. Several small streams are crossed, and as one comes near the mountains, the upper part of the Michol River is forded. After about eight kilometers' ride, the first indications of ancient structures, some small mounds near the trail are seen. Then a cliff wall is reached, the trail winding up along the side of it. Dismounting at the foot of the cliff and going a few steps to the left of the trail, one finds the Otolum brook coming out from under a stone bridge built by the Maya, one of several bridges to be found among the ruins.

FIG. 127—Palenque, Chis. Corridor of House A in Palace Group.

Climbing towards the plateau, about 100 meters above the level country, one passes many more structures. To right and left of the trail are small terraces, with mounds containing tombs.

The edge of the plateau is reached, and if the dense vegetation which generally covers the main part of the city has recently been cleared, you will have a magnificent sight before you. Pyramid after pyramid crowned by temples, the huge solid block of the Palace group, from which rises a tower, and behind it all hills 250 meters high, covered in deep green, luxuriant forest. If you turn and look back you will see the lowlands of Tabasco stretched at your feet. Forests and savannas extend far out to the horizon, and rivers wind silver ribbons into the carpet of rich green. Nature, to my mind, provides no other ruined city with a more exquisite frame.

Riding up to the foot of the huge Palace terrace, I tied my horse to a tree, as so many explorers have done before, and then scrambled up the sides of the terrace to the first corridor. This is a true Maya arched room, with fragments of stucco adornments on the walls (fig. 127).

Turning through a door, the main temple court bursts upon you. It is enclosed by buildings, now largely destroyed by time, with their roofs covered by clusters of wild pink begonias. From in among the shrubbery which covers the floor of the court stare faces of crudely carved gods, and right in front lies a stairway with excellently carved hieroglyphs on its steps. It is a fairy tale palace beyond description (fig. 128).

I wandered from building to building, now abandoned, once occupied by great rulers, holy priests, and busy workmen. Water drips from the roofs, and clouds of bats flash by as my echoing footsteps disturb them. Stairways and dark passages lead to subterranean galleries. Through a hole in one of the walls I again

emerge into the sunshine, to see the Temple of Inscriptions before me on the mountainside. The first visit to Palenque is immensely impressive. When one has lived there for some time this ruined city becomes an obsession.

As already stated, the ruins lie on a plateau, or shelf, on the side of the mountains. This plateau extends from east to west, a nearly vertical cliff forming the northern side, and mountains rising to the south. The sides of these mountains have to a great extent been terraced and structures erected there. Even up to the tops of the front ranges are walls and pyramids.

The plateau extends, as far as was explored in 1923, two kilometers east of the Maudsley map, and at least six kilometers to the west of it. All along this plateau are series of pyramids, many of which are oriented to the cardinal points. Various streams cut the area from south to north, and in many places are stone bridges, or streams that have been led into underground canals, built on the principle of the Maya arch. Down in the lowlands are mounds, and up on the

FIG. 128—Palenque, Chis. A corner of the main court in the Palace Group.

tops of the hills are pyramids. The vertical distance between the lowest and the highest structures is over 300 meters (1,000 feet). The area covered with ruins must be at least sixteen square kilometers.

As the principal group of structures has so often been described, I will add only a few notes on discoveries made during my three months' stay for the Mexican Government in 1923.

The Palace cannot be called one building. In reality it is a multitude of buildings erected around courts on one huge common terrace. To the north this terrace is broader than to the south, and on the northern side is a series of retaining walls rising in steps. The building standing along the northern edge fell towards the north, probably because of the weakening and sliding of the northern edge of the mound. The debris of this building now covers the greater part of the side of the terrace, save for some meters towards the northwestern corner. Here two large

stucco masks were found, one over the other, modeled on buttresses on the wall. A stairway may have led up to the Palace from this side; if so, it is now covered by debris. It is certain, though, that series of huge human faces once adorned the ends of the terrace, and as the two exposed faces still show traces of red paint, one can imagine what an imposing sight the front of the Palace must once have been (figs. 129 and 130).

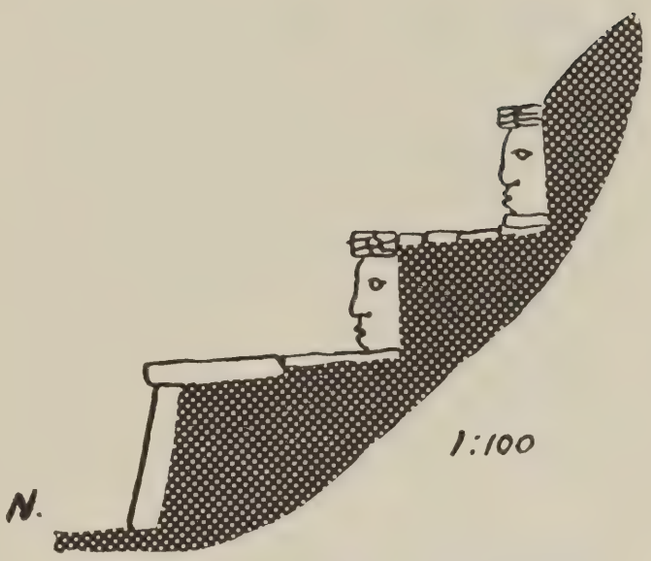


FIG. 129—Palenque, Chis. Section of the north side of the Palace mound showing position of stucco masks.

As for the buildings of the Palace little can be added to the excellent plans made by Maudslay, or to the descriptions by Seler and Holmes.

The stucco reliefs on the outside pillars of the houses, labeled A and D by Maudslay, have decayed only little as compared with his photographs. These reliefs are well executed, but much cruder in drawing than the reliefs found by the Tulane Expedition at Comalcalco.

FIG. 130—Palenque, Chis. Stucco mask on north side of Palace mound.

On the roof slopes of House B are remnants of stucco reliefs. On the east side there is a serpent, and on the west side several grotesque heads can be traced. On this side is also a frieze, of which only one element is preserved, an ornament of two interlaced, or platted bands (fig. 131).

The roofs of all the buildings in the Palace group were investigated, and only one of them, the roof on House E, was without a roof-comb or crest. The relatively small quantity of debris and broken stucco ornaments covering the roofs of the other buildings showed that their roof-combs were not as high as those on the Temples of the Sun, Cross, and Foliated Cross. The roof-crest on House B fell towards the west onto the roof of House E.

House E is undoubtedly the oldest of the buildings on the Palace mound. Its walls are heavy, its doors narrow, and, as stated, it is without roof-comb. Inside this house are various stucco ornaments, and an oval tablet carved with two figures. Over this tablet is a row of hieroglyphs painted on the wall.*

*For those who wish to study Palenque in more detail, we refer to Maudslay, Holmes, and Seler. The American traveller, Stephens, has a delightful description of his visit to the ruins in 1840.

On the western outside wall are groups of fresco paintings. These have been reproduced in black by Seler, but as the colours are quite fresh, I copied them during my stay at the ruins and give them in Plate I.

From one of the rooms in this house, one descends a stairway into what has been styled the Subterranean Galleries of the Palace. These galleries are not below the level of the main temple square, but are built on a low terrace. The buildings of the Palace proper are raised on a high foundation, so that their floor level lies over the roof of the "subterranean" chambers.

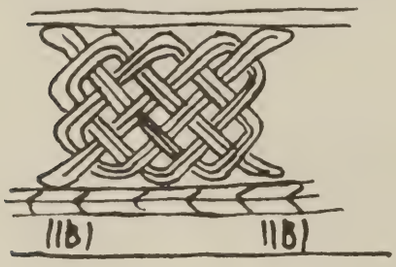


Fig. 131—Palenque, Chis. Stucco ornament on west side of House B. Palace.

This leads me to believe that excavation will reveal old buildings inside the main Palace mound. We know that it was the custom of the Maya builders to fill up old buildings and place new ones on top of them. Why should this not be the case here?

An interesting feature of the Subterranean chambers is that all three entrances to them were closed up with slabs set in even with the floors of the rooms from which they lead down. Also remnants of walls are found in the corridors connecting the upper temples with the lower rooms. These walls once sealed the corridors. This point will be taken up again when I describe some of the outlying structures.

From the top of the tower one gets an excellent panorama of the city. The Palace lies below with its buildings and courts. To the north is a temple on an isolated mound, and beyond this a row of five temples, all facing towards the Palace, and lying on the northern edge of the Main Plaza. Behind these is a vertical drop, and a view out over the lowlands of Tabasco with a glimpse of the church in Palenque Village.

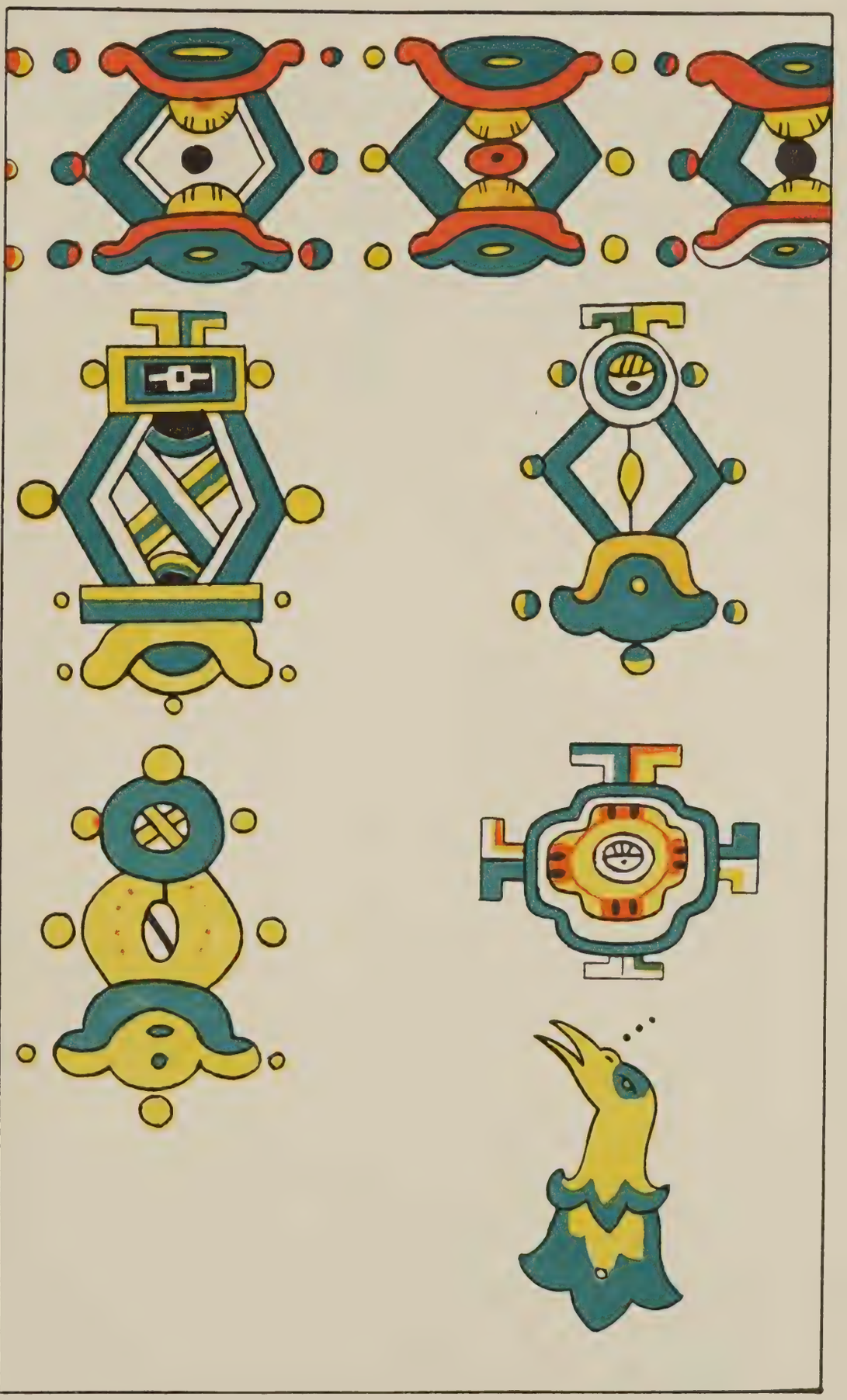
To the west the forest covers a string of Plazas and buildings, which will be described later. To the east rise the Pyramids and Temples of the Sun, the Cross, and the Foliated Cross, and behind these a mountain overlooks the wide plains, and at its top is a pyramid. A fire lit here must have been seen for a hundred miles.

To the south lie forest-clad mountains, hiding many mounds and such buildings as the Temple of the Beau Relief. Close by on the mountainside stands the Temple of Inscriptions on a terrace. On all sides are buildings, mounds, and squares, enclosed by a scenery of rare beauty.

Fig. 132—Palenque, Chis. Large limestone block carved to represent a crocodile.

Between the Palace and the court surrounded by the three sister temples, is the Aqueduct. A stream coming down from the mountains runs across the Main Plaza, and in the rainy season swells to a small river. This must have damaged the Palace mound, and caused the ancient builders to turn the stream into the underground tunnel, a sewer built of stone, on the principle of the Maya arch.

Just below the northeastern corner of the Palace mound this aqueduct, as it has been called, comes out from under the ground. Here one may enter and walk



EXAMPLE OF FRESCO PAINTING ON EXTERIOR WALL ON HOUSE E
PALENQUE, CHIAPAS

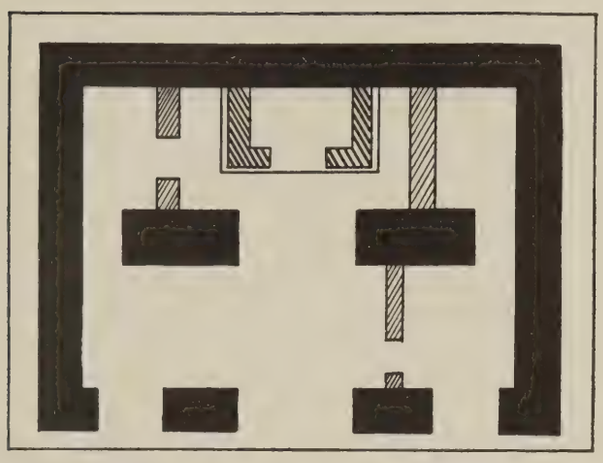


FIG. 133—Palenque, Chis. Ground plan of the Temple of the Sun, after Maudslay.

for quite a distance to where it is blocked by its fallen roof. It is not yet known just how far it extends, nor in what direction. At the mouth of the aqueduct, along the right bank of the stream, is a high wall, and where this terminates, a huge stone block has been set into the corner of the wall. This block measures 3.44 meters long, 1.10 meters broad, and .86 meters thick, or about 3.50 cubic meters, and lies about a meter above the stream. It is carved to represent a crocodile—very appropriate here at the edge of the stream (fig. 132).

From the aqueduct one now climbs the side of a terrace, reaching a rectangular Plaza surrounded by temples. At the northern end of this Plaza lies the Temple of the Cross. Beyond, on either side of the Plaza, are the ruins of more temples, and to the south the Plaza is closed by a long building, behind which rise the mountains.

The three main temples which are best preserved have been so often described, and their general construction is so similar, that I will describe only one of them, the Temple of the Sun (fig. 133).

The facade of this temple is divided into three doorways by two pillars. These pillars had stucco reliefs on their exterior. Over the doorways were wooden lintels which have now disappeared through decay.

The roof slope was decorated with an elaborate ornament consisting of human figures and serpents modeled in stucco low relief. On the saddle of the roof stands the roof-comb, a lattice work of stone which once was entirely covered with a very elaborate decoration, also in stucco. On every part of this facade, coloring is still to be seen in

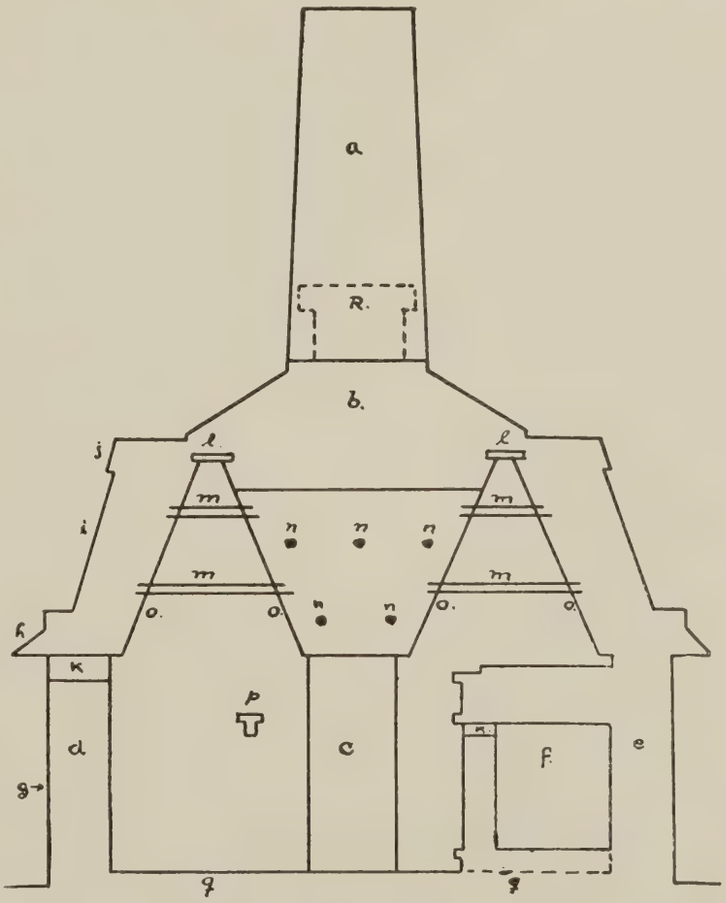


FIG. 134—Palenque, Chis. Section of the Temple of the Sun, after Holmes.

a. Roof Comb.
b. Roof.
c. Central Wall.
d. Front Wall, Pier.
e. Back Wall.
f. Sanctuary.
g. Stucco Relief.
h. Architrave.
i. Roof Slope.
j. Cornice.
k. Wooden Lintels.
l. Key Slab.
m. Wooden Beams.
n. Beam Holes.
o. Vault Slope.
p. Window.
q. Floor.
r. Roof Crest.

places protected against the weather. The Maya temples, like the Greek, were painted in many colors, among which a deep red was predominant (fig. 134).

The temple contains two parallel halls, the eastern one of which is reached through the main doorways. Three doors lead into the interior hall which is divided into three rooms. In the central room is the sanctuary, a separate house built inside the temple room, with a carved tablet on its back wall. This tablet is of limestone, and is composed of three slabs upon which human figures and hieroglyphs are carved in low relief.

In the floor of the sanctuary a deep hole had been excavated by treasure hunters, and several feet of dirt formerly covered the floor of the rest of the temple. This dirt was cleared out and the hole in the sanctuary floor filled with it. During the clearing several minor objects were encountered, among which were the head of a fish modeled in clay, and parts of a human face of heroic size, with the nose exquisitely modeled. A small knife of obsidian was also found, and two perforated stones, which may have been used as weights on the lower edge of a curtain. The floor was cleaned and found to be painted red and highly polished.

Holmes gives a drawing of the west side of the roof comb, showing that the central motif of its decoration was a man sitting with legs crossed, Turkish fashion. Among the debris found below and right in front of this figure was the well modeled nose and upper lip of the human face.

The central motif of the facade's roof slope was likewise a human figure sitting with legs crossed, of which only the torso is preserved. To the right of this, one still sees the head of a long-nosed god protruding from the open jaws of a serpent.

The ground plans of the Temples of the Cross and of the Foliated Cross are similar to that of the Temple of the Sun. Both facades and roof combs are covered with fragments of stucco ornamentation.

Two carved stone tablets are now inserted in the front walls of the church in the village of Palenque. In his drawing of a reconstruction of the sanctuary of the Temple of the Sun, Catherwood places these stones on either side of the entrance. Maudslay comes to the conclusion that these tablets were originally on the sides of the sanctuary of the Temple of the Cross. During my stay at Palenque, I measured the tablets very carefully and also the walls of the three sanctuaries, and found that these tablets could have fitted only on the front walls of the sanctuary in the Temple of the Cross.

When filling a hole in the floor of the Temple of the Foliated Cross, many fragments of stucco ornaments were found. Some of these were covered with numerous sheets of travertine, showing that they must have been on the walls at one time, and covered by water saturated with lime which constantly trickles down the temple walls. When dried, the travertine could be removed, and the ornaments underneath were exposed with their original colors, like the one shown in Plate II.

I do not aim to give a complete description of the Palenque ruins, but merely to put on record the most interesting discoveries made during my stay there. I will therefore leave the main building and turn to the Plaza lying to the south of the three temples just mentioned. Continuing along the eastern edge of the Plaza from the Temple of the Foliated Cross, I first reached a small mound, upon which Maudslay discovered a stone seat and a large head carved in limestone.*

This monument is now in the National Museum in Mexico City. On the front of the stone chair is a double band of hieroglyphs ending in the date 8 Ahau 8 Uo (9-13-0-0-0), a very important date in the history of Palenque.

*Maudslay, 1899, Vol. IV., Plate 90.

STUCCO ORNAMENT WITH ORIGINAL COLORS FROM TEMPLE OF THE FOLIATED CROSS, PALENQUE, CHIAPAS

FIG. 135—Palenque, Chis. Stucco inscription from the back wall of building XVIII. Scale 1:10.

Next I reached a badly ruined temple with only end walls and part of the central walls standing. This structure faces west, towards the Plaza.

Further to the south, against the hillside, lie two small temples, exactly alike. The southernmost of them is entirely in ruin, and the back and side walls are still standing on the northern side. While measuring these buildings a hieroglyphic inscription was discovered on the back wall. The upper part of this inscription modeled in stucco had been protected by some large stones from the roof. When these were removed blocks of hieroglyphs were found upon the plaster of the back wall, each modeled independently and set on the surface of the wall. The mortar of the wall surface was of a very poor grade and the hieroglyphs in many cases were falling, so the entire inscription was removed and placed on a table in a small museum which I had erected near the Palace (fig. 135).

The inscription runs in a double line of large hieroglyphs along the upper edge of the wall. There were thirteen glyphs in each line. Only one of the upper line, A-9, is still preserved; in the lower line, glyphs B-8 and B-10 are missing. Glyph B-1a appears to be the face numeral for 3 with either the sign for Uinal or Chuen, and B-1b may be a 3 or 4 Pop. In glyphs B-5-B-6 we have a secondary series of 13 Tun, 3 Uinal, and 10 Kin followed by glyph B-7, being End Katun 2. The rest of the glyphs in this line cannot yet be deciphered.

Underneath these two rows of glyphs are eight groups of smaller glyphs of which several appear to be connected with lunar calculations. Only in Group G do we find a date, which either reads 5 Ahau 18 Pop, or 5 Ahau 18 Kayab. On the strength of the what may be "end Katun 2" given in Glyph B-7, Dr. Morley tentatively reads this date as 9-2-3-0-0 5 Ahau 18 Pop (218 A. D.)* If contemporaneous, this would be quite an early date for Palenque.

The lower part of the wall was undoubtedly covered with figures in stucco relief, of which now only the feathered head-dress of a standing person, and the crossed legs of a sitting figure are preserved.

At the end of the Plaza lies a long building facing north and so much in ruin that it is not possible to draw a ground plan (building XIX). Opposite building XIX on the western side of the plaza is a high pyramid crowned by a building facing east. This building likewise is in an advanced state of ruin (building XX). Between this and the Temple of the Sun finally lies Building XXI, a structure enclosed by vertical walls of very large stone blocks, on the top of which stood a building facing north.

To finish the description of the buildings around this big Plaza we will mention Structure XIV, a small temple to the north of the Temple of the Sun, and S-5, a large tomb inside a mound, which was opened and described by Thompson.†

This completes the description of one of the most important Plazas in Palenque. All buildings around it appear to be temples where undoubtedly all the big ceremonies to the Gods were conducted.

The Otolum stream comes down from the mountain through a narrow gorge, and retention walls have been built on either side of this to prevent the stream from washing away the foundations of a large mound on the eastern bank, as well as of the Temple of the Beau Relief on the western bank. On top of the mound on the eastern bank are several chambers now exposed by their roofs caving in. Crossing the Otolum, we come to the Temple of the Beau Relief, which lies on the side of the steep mountain and faces towards the east. Various explorers have

*Spinden. 1924, Page 208, has this date as 9 Ahau 3 Zotz, which undoubtedly is a typographical error.
†Thompson, 1895.

suggested that a stairway once led up from the stream of this temple, but careful investigation of the mountainside revealed no signs of such. The temple is a small building of two rooms; the front room now entirely destroyed. On either side of the doorway leading into the back room are impressions of stucco hieroglyphs now effaced. All that can now be seen is that here once was an initial series inscription, as fragments of the introducing glyph are still preserved. On the back wall of the temple was once a beautiful stucco low relief. This was drawn by Waldeck, and parts of it again by Catherwood. It is now totally destroyed but for a bench resting on jaguar feet. It has been stated that Waldeck's drawing of this relief was too French in style and too well executed to represent a piece of Maya art. No doubt the drawing shows a certain foreign style, but judging from what little is still preserved, and the artistic skill seen in the stucco figures discovered by the Tulane Expedition at Comalcalco, I am inclined to believe that Waldeck's drawing is essentially correct.

A small stairway leads from the back room into some vaults below the floor of the temple, and I believe that this building was not a temple, but a mausoleum built in honor of some great ruler of Palenque.

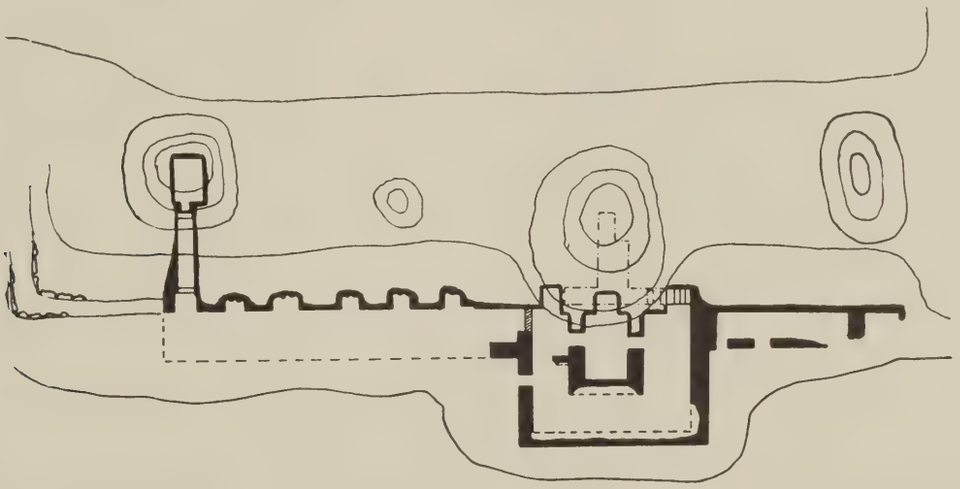


Fig. 136—Palenque, Chis. Burial vaults to the south of the Temple of the Beau Relief.

Along the exterior at the lower edge of the roof slope is a cornice with limestone slabs laid in mortar. They are placed at a steep angle in such a position that they could only have been laid, without the use of scaffolding to support their lower edges, while the mortar in which they were set was drying.

To the south of this building is a terrace, and on Maudslay's map we find the inscription "Group of chambered mounds in this place." During my work at Palenque I gave this group the number XXVIII and made a map of it (fig. 136). It is a complicated assembly of chambers and corridors, to which niches lead from the side of the terrace. Excavation has previously been attempted in all niches, but only the southernmost gives access to a corridor and burial chamber. In this chamber stands a stone box made of carefully cut limestone slabs. Whoever made these excavations left no record of his work.

The Temple of Inscriptions has repeatedly been described in great detail. It lies to the southwest of the Palace on the side of the same mountain as the Temple of the Beau Relief. On its walls are three big tablets containing rows of hiero-

glyphs. During the visit of a former Mexican Government Inspector of monuments, these tablets were washed with an acid to clean them, with the fatal result that the inscriptions are now pealing off. I did not touch these tablets for fear of furthering their destruction. In the rear room of this temple the floor is made of huge stone slabs, of which one has two rows of perforations, which used to be closed with stone plugs. I cannot imagine what these holes were intended for.

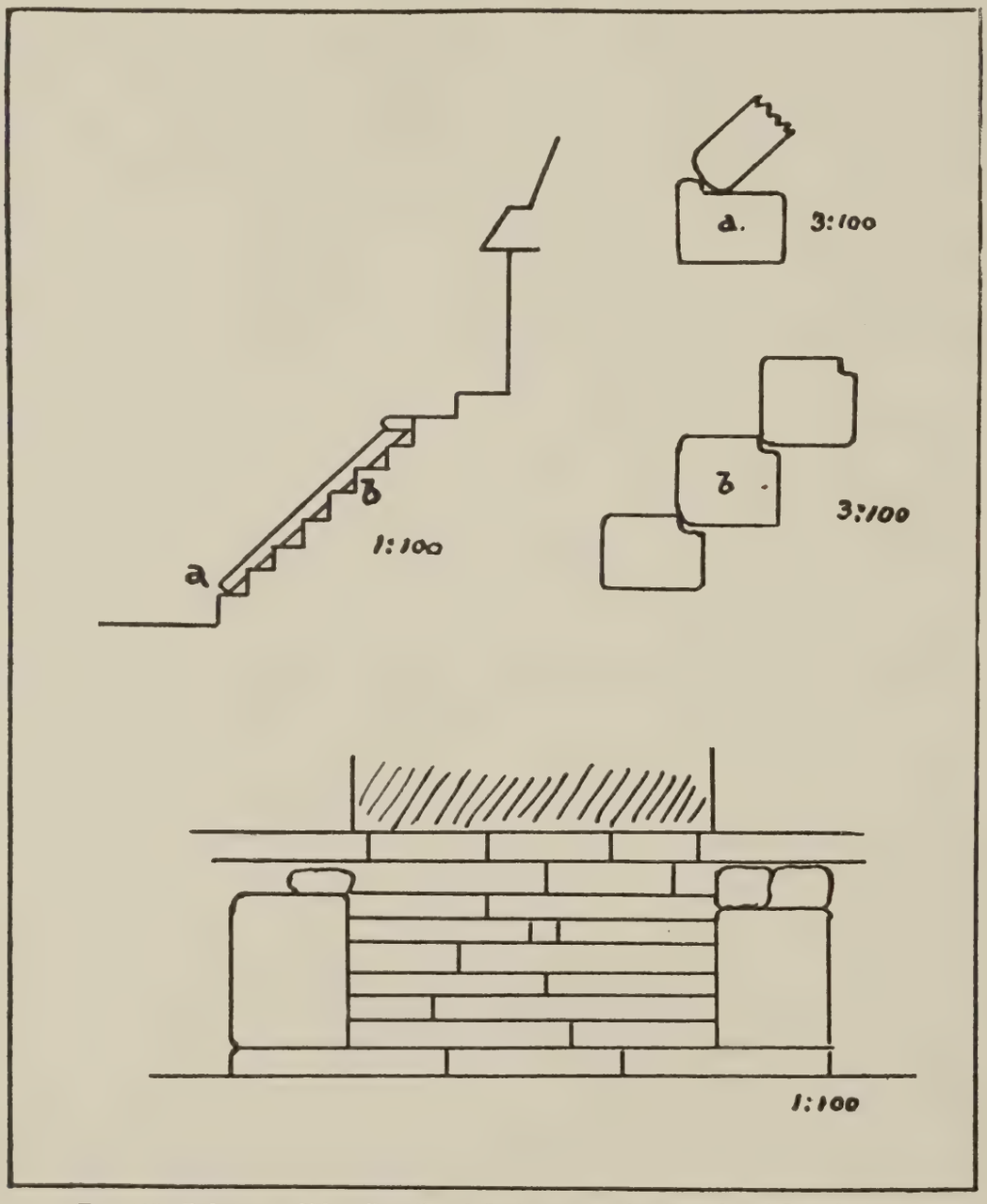


Fig. 137—Palenque, Chis. Details of Stairway to the Temple of Inscriptions.

A stairway leads down from the temple to a small terrace. Its steps are cut of stone blocks with the front edge of one resting on the back edge of the step below in a notch as shown by Figure 137.

To the west of the Temple of Inscriptions lie two mounds, one supporting a building now entirely in ruin, and on the other stand parts of a temple. The ground plan of this temple is similar to the plan of the Temple of Inscriptions.

It does not contain any interior decoration, but on its facade were stucco reliefs, of which only a huge death head is preserved (fig. 138).

Before I leave the area shown by the map of the Maudslay expedition, I have still to speak of the five temples lying along the northern edge of the Main Plaza, facing south towards the Palace. These temples are of varying size. Looking at them from east to west, we first see a small building that contained one single room, of which only the western side wall is standing. Then a long temple with a double gallery; the front one containing one room, while the rear gallery is divided into three rooms, of which the large central one has the appearance of a sanctuary. On the back of the building the roof slope has fragments of a stucco decoration representing the head of a serpent-bird.

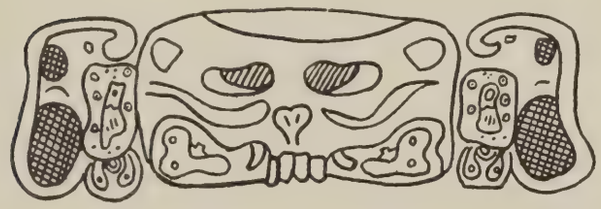


FIG. 138—Palenque, Chis. Death head in stucco, from the Temple west of the Temple of Inscriptions.

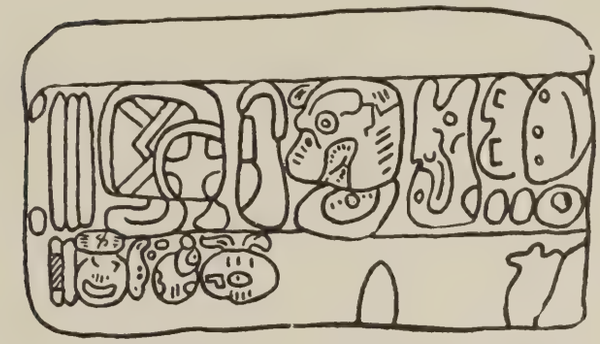


FIG. 139—Palenque, Chis. Hieroglyphic Inscription from Temple D, of the North Temples.

Then follows another one-room building, and after this a large temple designated by the letter D. Set in one of its walls is a large limestone block carved with hieroglyphs. This block apparently has been rejected from some former structure and used here merely as building material, for the stone is set into the wall with the glyphs upside down. The only legible sign is 18 Pop (fig. 139).

The last temple in the line has been given the letter E, it is badly in ruin, with only one of the smaller rooms of its back gallery being intact. As the construction of the vault of this room is somewhat unusual a cross section of it is given in Figure 140.

There remains only one temple to describe, which locally goes under the name of El Templo del Conde—no one knows why. The building lies between the row of five temples just mentioned and the Palace, along the western side of the Main Plaza. Its ground plan is given in Figure 141. The slope of its roof is somewhat steeper than those of other temples in Palenque, and upon it still are fragments of huge stucco masks. In the back wall of the sanctuary is a small niche, before which a clam shell with orange-yellow rim was found in the debris around a deep hole. On the north side of the southern pillar flanking the central doorway were some glyphs under a thick layer of travertine. These were cleaned, but give no dates (fig. 142).

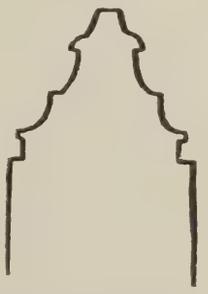


FIG. 140—Palenque Chis. Section of a room in Temple E of the North Temples.

During my stay at the ruins I made a traverse with compass and pace both to the east and west of the area mapped by Maudslay. This traverse was roughly done and made chiefly to get a general idea of the size of the area once occupied. A detailed account of this newly explored area will not be given, but certain groups of the most interesting ruins will be described.

On the map (Map IV) these groups will be found lettered from A to I. Wherever a capital S is seen, there are indications of burial vaults, and those

measured, drawn, and, in some cases, excavated, are indicated with both an S and a number.

Group A is a burial ground lying north of the Main Plaza and at a lower level. The group consists of several mounds in which were burial chambers and those excavated were entered through openings made by rain washing away some of the building material. In no case was an attempt made to open an untouched mound, as time did not permit this. It was thought wise, however, to excavate all burials opened by nature and attempt to preserve the material thus exposed to treasure hunters before the data would be destroyed.

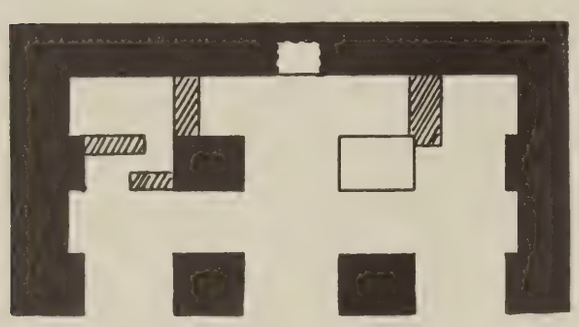


Fig. 141—Palenque, Chis. Ground plan of "Templo del Conde." Scale 1:200.

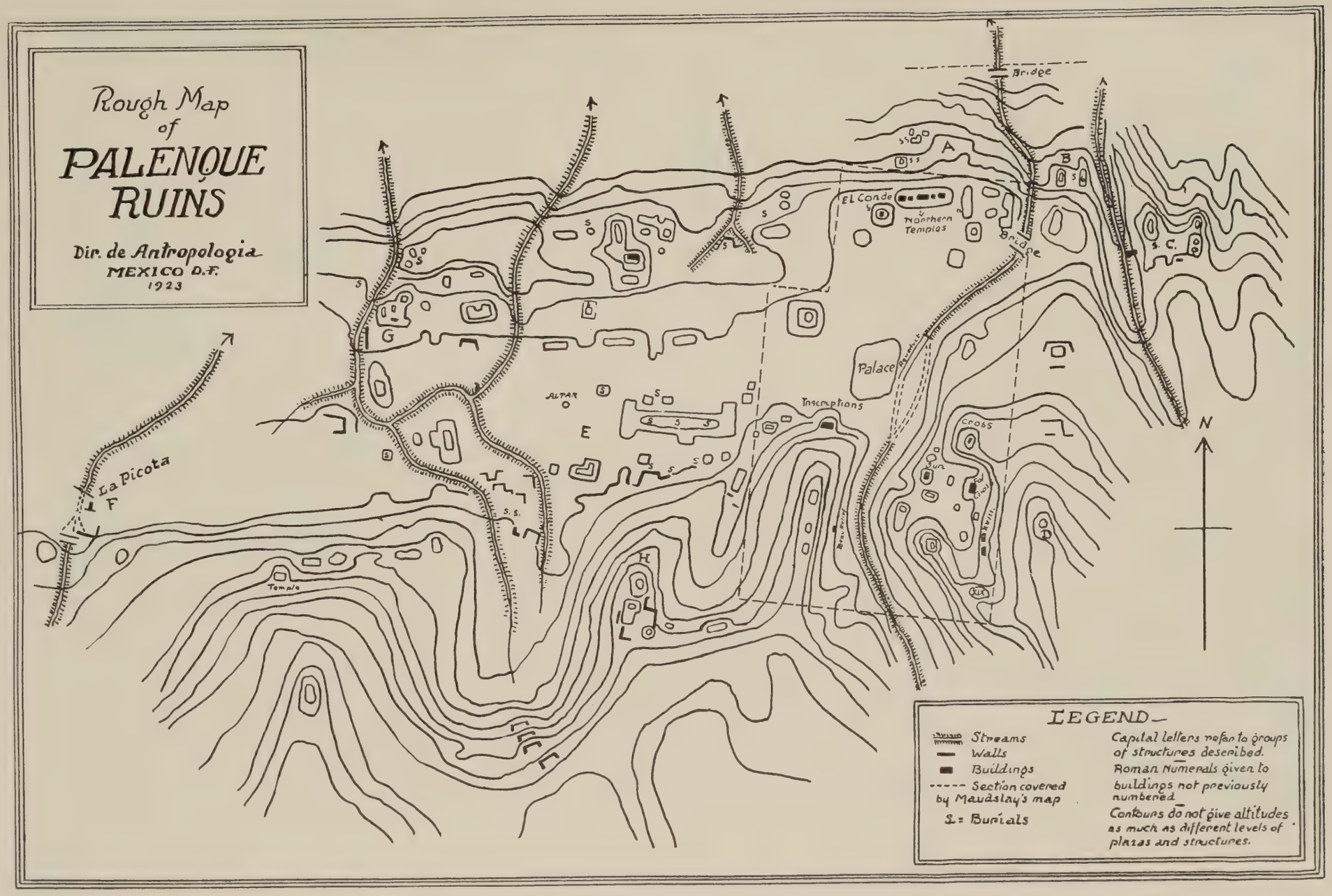
Some of the burial mounds lay on terraces with retention walls built of stone, behind which several other vaults were found. Evidently it was customary in Palenque to place burial vaults not only in separate mounds, but also in the sides of the temple pyramids and along the edges of terraces.

The following burials were investigated in Group A:

S-1. This burial lies behind a retention wall. The entrance passage runs parallel to this wall, and through it one enters into a small ante-room at a right angle to the passage. From this ante-room there is another right-angle turn into the burial room proper. The roof of the entrance passage and the northern end of the burial room has fallen. The burial itself consists of a stone box built of cut limestone slabs. The slabs at the northern end of the burial had been lifted and the tomb undoubtedly had been rifled, for only a few pieces of broken pottery and some of the bones of a foot were found lying in the northern end of the tomb (fig. 143).

S-2. This burial lies a short distance to the west of S-1 in a mound. The entrance was found to the north through a small corridor opening into a vaulted room. In the northern end of this room lay a heap of loose stones. Excavation of the burial revealed a stone box similar to the one discovered in S-1, but made of more crudely cut stones. On the lid of this box lay parts of the vertebral column of a young person. One of the vertebrae was badly deformed. Nineteen teeth, of which several incisors were filed, were located in the northern end of the room. Inside the tomb, in its northern end, were twelve more teeth of which one incisor had a small

Fig. 142—Palenque, Chis. Stucco hieroglyphs from "El Templo del Conde."


Rough Map
of
PALENQUE
RUINS
Dir. de Antropologia
MEXICO D.F.
1923
Bridge
A
B
El Conde
Northern
Temples
Bridge
S. C.
G
Palace
Aqueduct
Inscriptions
Cross
Sun
Fol
Cross
Altar
E
La Picota
F
S. S.
H
Temple
D
N
LEGEND—
Streams
Walls
Buildings
Section covered
by Maudslay's map
S = Burials
Capital letters refer to groups
of structures described.
Roman Numerals given to
buildings not previously
numbered.
Contours do not give altitudes
as much as different levels of
plazas and structures.

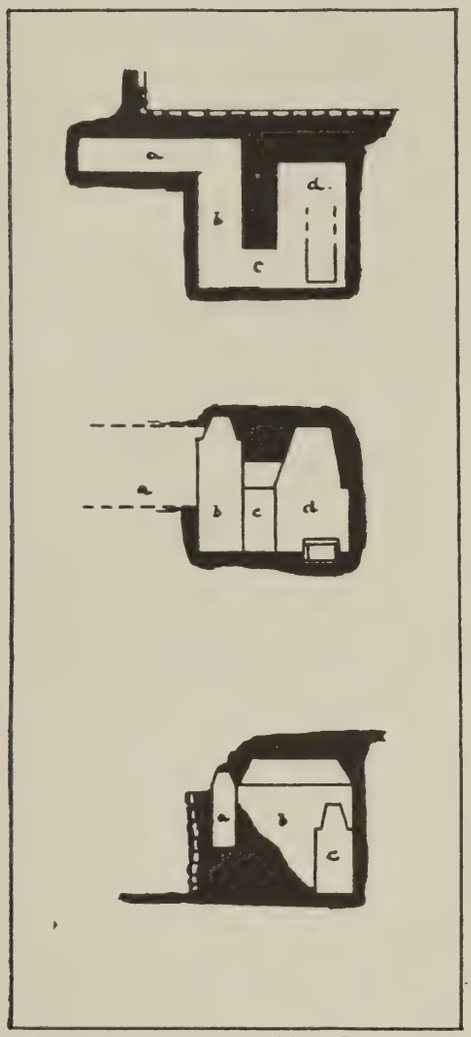


FIG. 143—Palenque, Chis. Plan and section of Burial S-1.

circular hole for an inlay, and another still contained an inlay of black stone. A spindle whorl of limestone, a bone needle, and many fragments of pottery were among the things found in this tomb (fig. 144).

S-3 and S-4. (Fig. 145). Right on the trail leading up from the lowlands to the Main Plaza, a row of stone tablets were noticed. I concluded that they were the cover slabs of burials, exposed to destruction by the hoofs of mules and horses carrying visitors to the ruins, and decided to make an investigation. Dirt was cleared away and two burials appeared. These were stone boxes set directly in the ground without any mound over them; one built a little over the other. As the upper grave was of cruder build and nearly overlapped the lower one, this upper grave undoubtedly is the more recent of the two. The upper grave is numbered S-3, and its construction may readily be seen from the attached drawing. The walls were built of small stones held together with mortar, the southern end of the grave being narrower than the northern end, indicating that the body had been placed in the grave with its head towards the north. Both this and the lower grave, S-4, had small niches in the west walls where clay pots were placed. the only other objects found in S-3 were a clay spindle whorl, a few splinters of human bones, and a small melon-shaped bead of light green jade.

S-4 was built with more care than S-3. It contained various fragments of human bones and in its northeastern corner were several teeth. A pot stood in the niche with a flat bowl right in front. The box was built of stone slabs set together without the use of mortar. The body had been laid directly on the slab floor with its head towards the north.

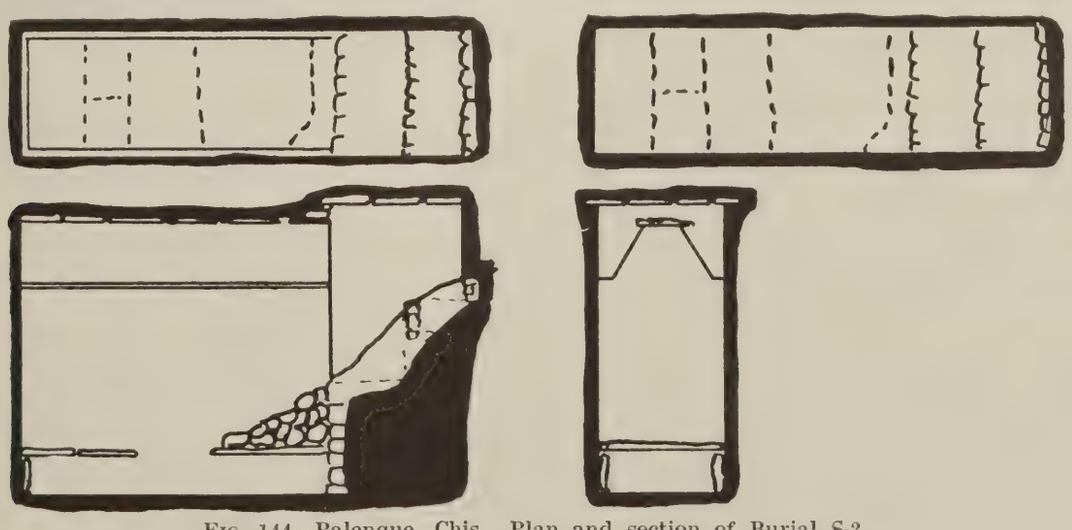


FIG. 144—Palenque, Chis. Plan and section of Burial S-2.

S-5 is a very elaborate burial vault in a group of mounds to the north of S-1. Here four mounds surround a small plaza and inside the westernmost of these is a large vault with roof now partly fallen in. A shaft leads down from the top of the mound to the southern end of the room, and a passage enters into the room from the east. I was not able to ascertain whether the passage or the shaft was the original entrance to the tomb. The room contains four burials, two lying to the north and two to the south. These burials are boxes made of small stones and mortar. The one in the north side is broader at its northern than at its southern end, indicating that the body was placed in this tomb with head towards the north. The four tombs were excavated, but no objects were found (fig. 146).

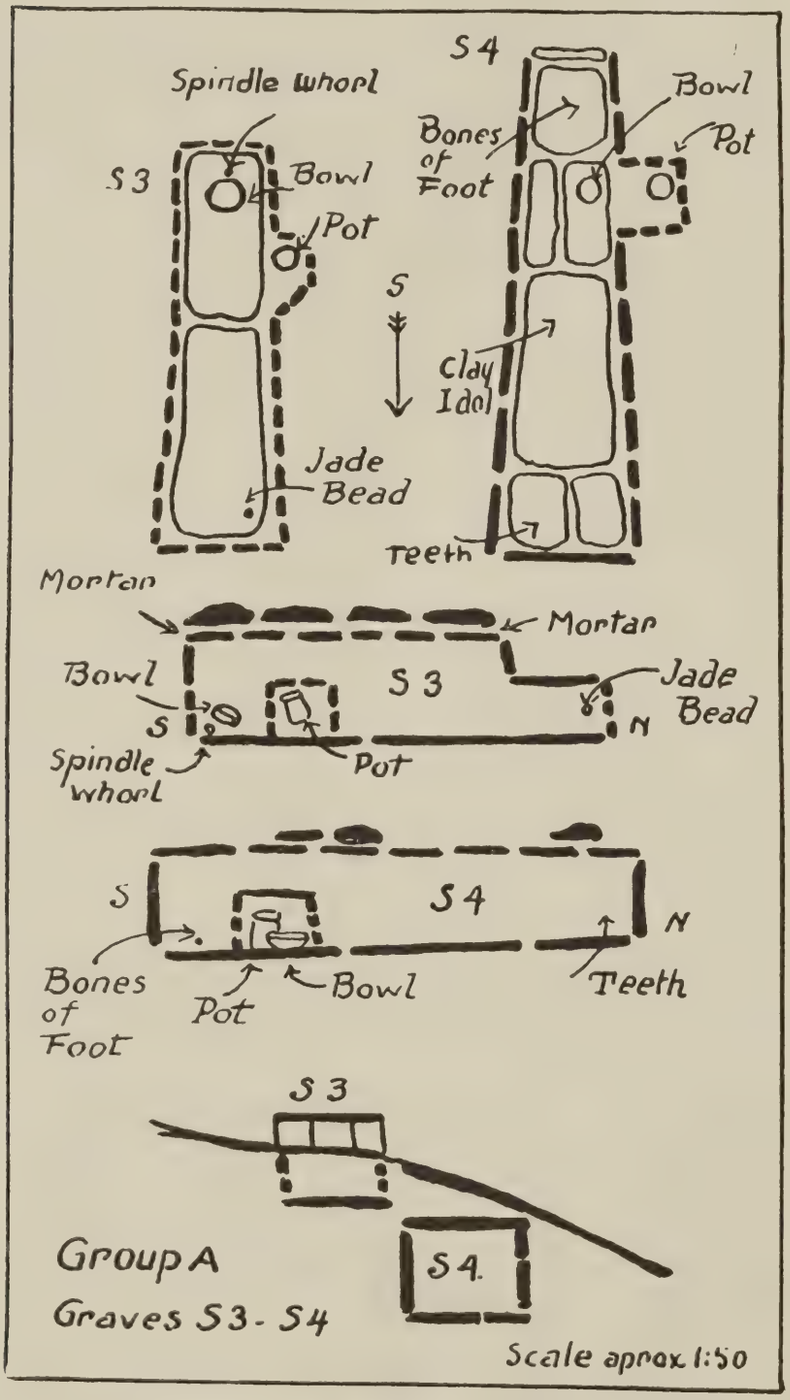


Fig. 145—Palenque, Chis. Plans and sections of Burials S-3 and S-4.

Group B. At the northeastern corner of the Main Plaza, the Otolum stream forms a beautiful waterfall about 30 meters high. On the eastern bank of the stream just below this fall is a terrace on which lie two mounds. Inside the easternmost of these is a tomb, S-6, consisting of a passage, an antechamber, and two burial rooms, as shown in Fig. 147. No excavation was made here, as the tomb had long been open and gave the appearance of having been visited by treasure hunters.

Group C. When we pass over the well-known bridge crossing the Otolum and go towards the east, we come to another stream at a point where its western bank is formed by a vertical wall of natural rock. On the eastern bank, which slopes slightly, lies a rampart constructed of limestone blocks, indicating that this stream once was spanned by a bridge of wooden logs. This bridge leads to a small plaza on the western side of which is a high pyramid.

In the southern end of this pyramid is a room with two passages leading towards the north and blocked by rough stones. The pyramid gives the appearance of being honey-combed with chambers (fig. 148).

On the east side of the Plaza is a terrace on which lie three mounds, B on the ground plan, undoubtedly containing burial chambers, and on its southern side lie the remnants of a small building, A on the ground plan.

Group D. Behind the Temple of the Foliated Cross rises a steep hill, the top of which has been leveled, and here stands a pyramid. The vertical distance between the top of this pyramid and a small mound lying at the foot of the ascent to the main plaza is 330 meters. From the top of this pyramid one has a most magnificent view over the lowlands of Tabasco to the north.

We now turn to the area lying to the west of the Maudslay map.

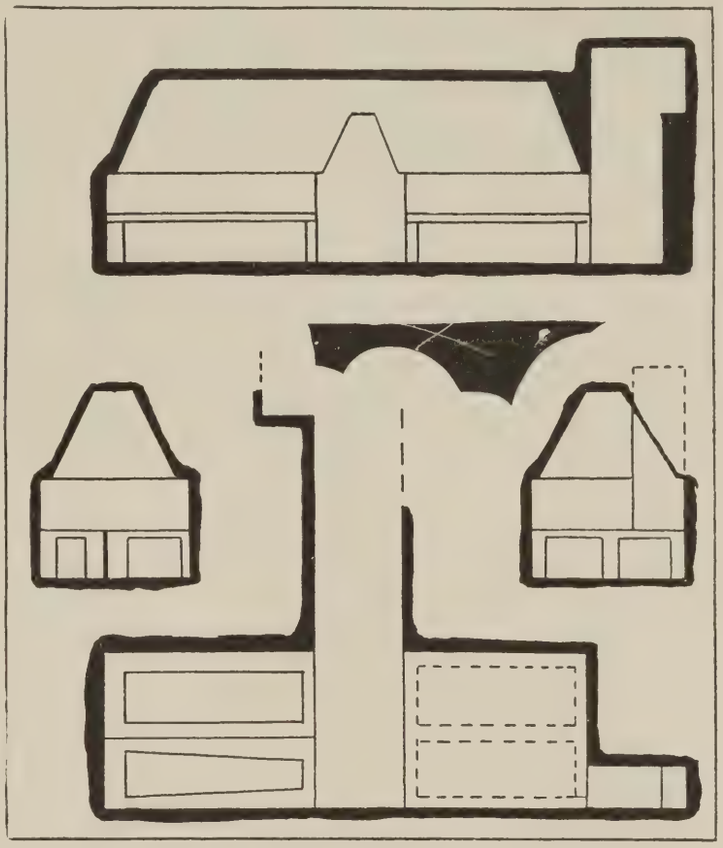


FIG. 146—Palenque, Chis. Plan and section of Burial S-5.

Group E indicates a large level area at some distance to the west of the Temple of Inscriptions. It is bordered to the west by a stream; on its northern edge lie several mounds; and on its eastern side an oblong mound fills the space between the square and the hills on which the Temple of Inscriptions is located. Finally, on the southern side, are mounds at the foot of a mountain range. In the center of this level area lies a huge rough stone block, the upper surface of which has been grooved and polished to form a large basin. This block undoubtedly was used as an altar.

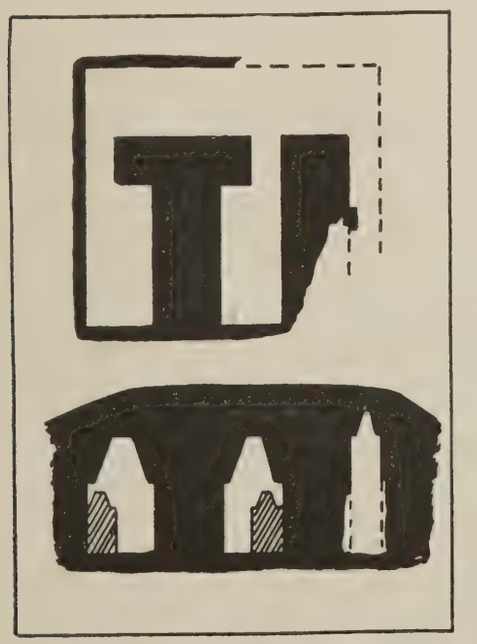


FIG. 147—Palenque, Chis. Plan and section of Burial S-6.

The oblong mound just mentioned contains remnants of buildings and various V-shaped cavities indicating the fallen-in roofs of burial chambers. The hillside south of this mound has been terraced, and here also are many such cavities, and a few exposed burial rooms.

Group F. From various sides I heard rumors of a stone column to be found somewhere west of the ruins. Many people in the town of Palenque had heard of it, but none knew where it was. Everyone had second-hand information, and

when I tried to get hold of the original informant I was usually told that he was dead. I finally came in touch with an Indian living at the foot of the ruins, who told me that he had seen this stone column when on a hunting trip as a small boy with his father. He was not quite sure where the stone column was, but would undertake to search for it. One morning we set out, walking westward along the foot of the natural wall that runs along the north edge of the ruined area. Several small streams were crossed and then we followed one of them towards the south. Soon the old Indian told us that we were nearing the place where the monument was supposed to be. He had brought along two small boys who were constantly leaving the trail in search of small clay figurines which they knew I would buy from them. Suddenly one of the boys called to his father that he should come to see a strange tree trunk. We turned back and there saw the stone monument for which we were searching. It stood only a few feet away from the trail we had cut through the dense bush. The Indians called this monument "La Picota." It is an ordinary stela without carvings, and two small stone drums in front of it served as altars (fig. 149). "La Picota" in itself is interesting, because it is the only standing stela as yet discovered in Palenque; and still more interesting is the Plaza on which it is found. (fig. 150). Three small streams come down from the mountain at this point, and the ancient builders have led them into sewers built of cut stones, the three small tunnels joining into one main. To the west is a stone walled basin or bath connected to the main aqueduct through a small underground canal. Along the southern side of the Plaza is a terrace with a stairway leading to a bridge across the largest of the streams.

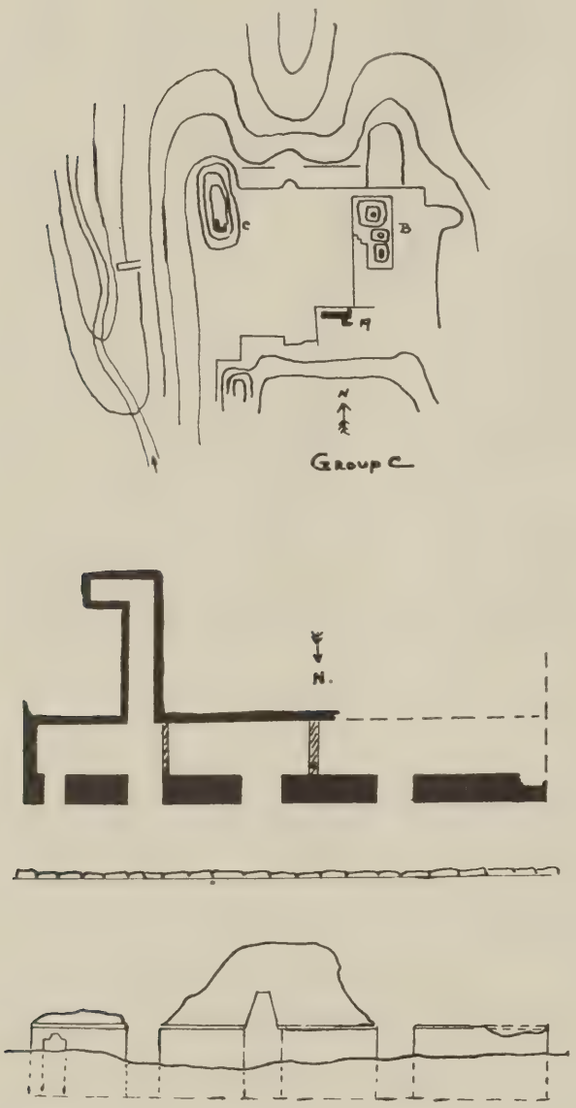


Fig. 148—Palenque, Chis. Map of Group C and plan of House A in same group.

Group G. (Fig. 151). A small stream runs along the western side of this group, and along its east bank a wall has been placed as protection from the floods of the rainy season, for the Plaza in ancient times had been excavated to a lower level than that of the stream. The group itself consists of one large mound where are remnants of various buildings, and two pyramids. Most of these buildings consist of ruined passages inside mounds and are shown with numbers from 1 to 4 on the ground plan of the group. No. 1 contains several rooms facing west. No. 2 is a long passage in the side of Pyramid A, and leads into a room under the south side of the pyramid. Doors blocked with crude stones indicate that the core of the pyramid contains more rooms. No. 3 is a large room inside a mound, and No. 4 a narrow passage running under the floor of a terrace from which a stairway leads down to a Plaza

marked X. B is a steep pyramid facing south with the ruins of a building on its top. No excavations were made in the passages and rooms of this group.

Fig. 149—Palenque, Chis. Standing Stela, "La Picota."

North of the group a small mound was found containing two rooms connected by a corridor. The easternmost of these rooms was nearly filled with debris, and the door to the west was closed by a wall. Some loose stones in this wall were taken out and a burial chamber exposed. Plan and section of this chamber is given in Figure 152. The chamber contained a low table along its eastern wall, and on this were found parts of a human skeleton laid with the head to the north. At the place where the head had been, lay a large ear plug carved out of mother-of-pearl; and very brittle fragments of another earring was found in the dirt covering the table. The bones were soft and decayed and it was not possible to determine either sex or age of the person buried here.

Group H. (Fig. 153). Lies on a mountain spur to the southeast of the Temple of Inscriptions. In fact, both the Temple of Inscriptions and Group H lie on the point of spurs on the same range with a ravine between them. On the top of the spur of the Temple of Inscriptions are three pyramids in line. These lie at approximately the same level over the Main Plaza as Group H. This latter group consists of a pyramid—lying on the northernmost point of the spur—on the top of which is a totally ruined temple (C on the plan). South of this lies an intricate collection of minor mounds and a terrace. The interior of one of these mounds, marked

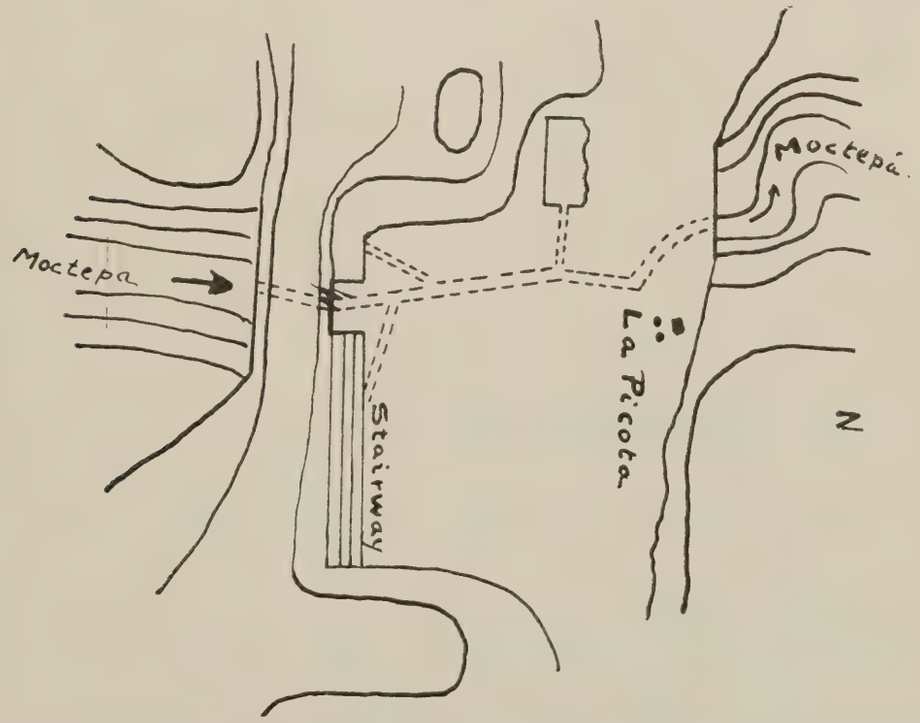


Fig. 150—Palenque, Chis. Map of Group F showing position of "La Picota" and aqueduct. (Scale 1:1000).

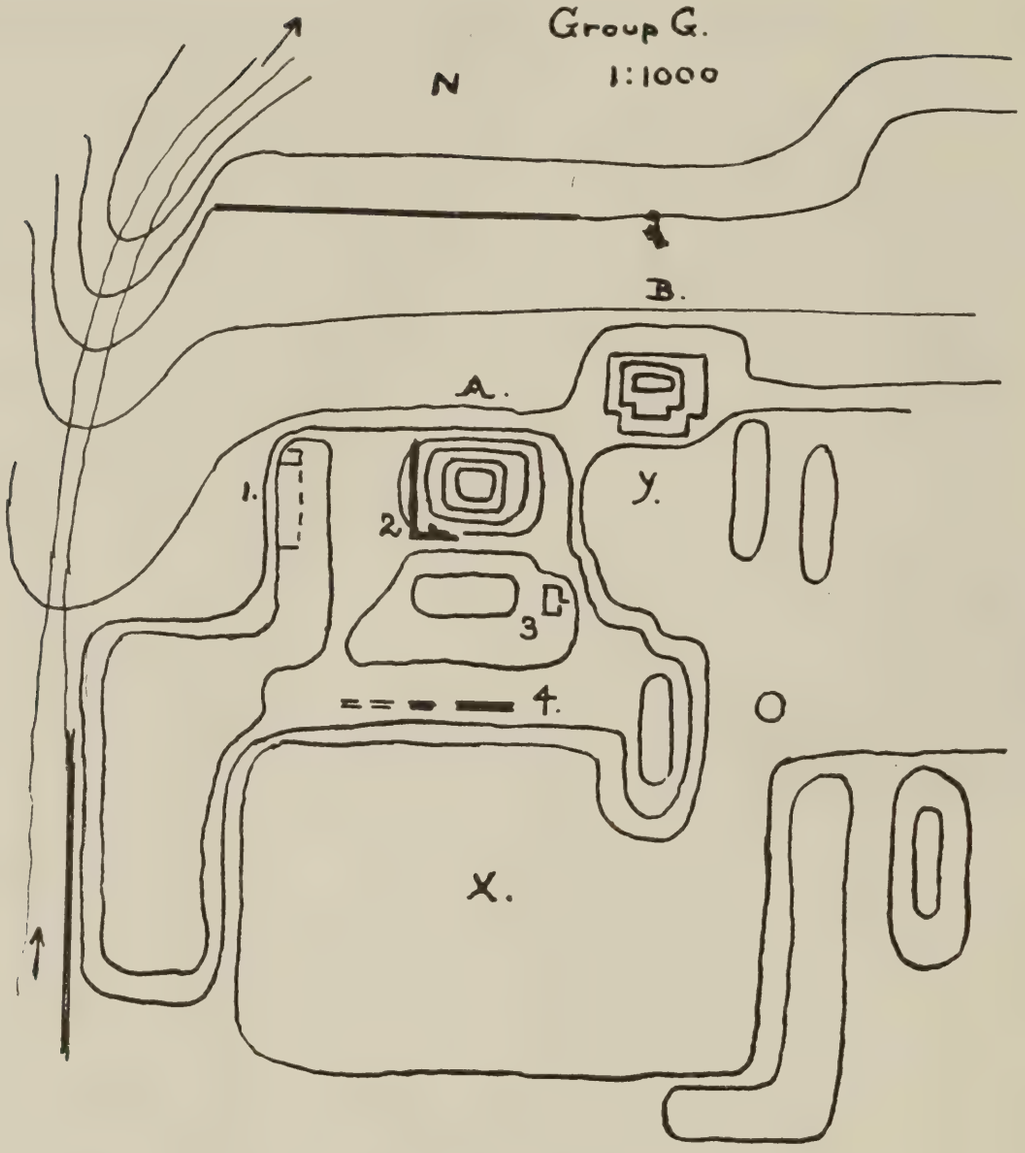


FIG. 151—Palenque, Chis. Map of Group G.

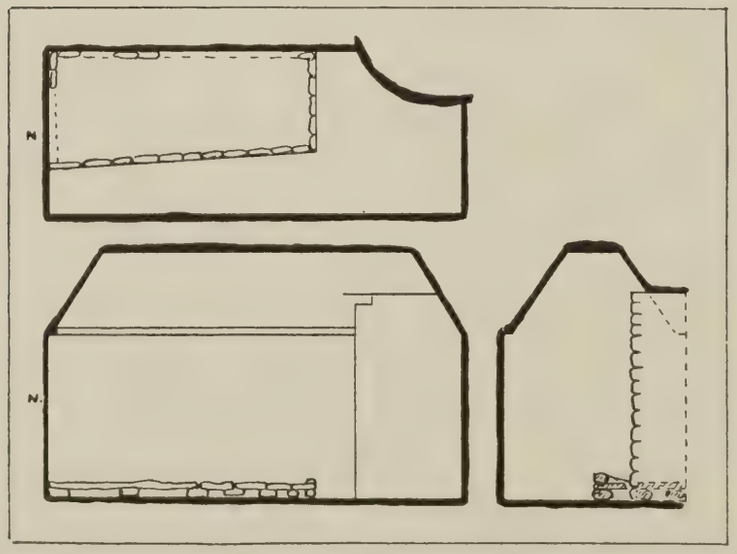


FIG. 152—Palenque, Chis. Plan of Burial north of Group E
Scale 1:100.

B on the plan, contains a series of underground passages and rooms, which, in their general appearance are much similar to the subterranean rooms of the Palace (fig. 154).

A passage with steps goes down into the main room, and a secondary wall closes this entrance. Along the interior walls of the room are a series of half

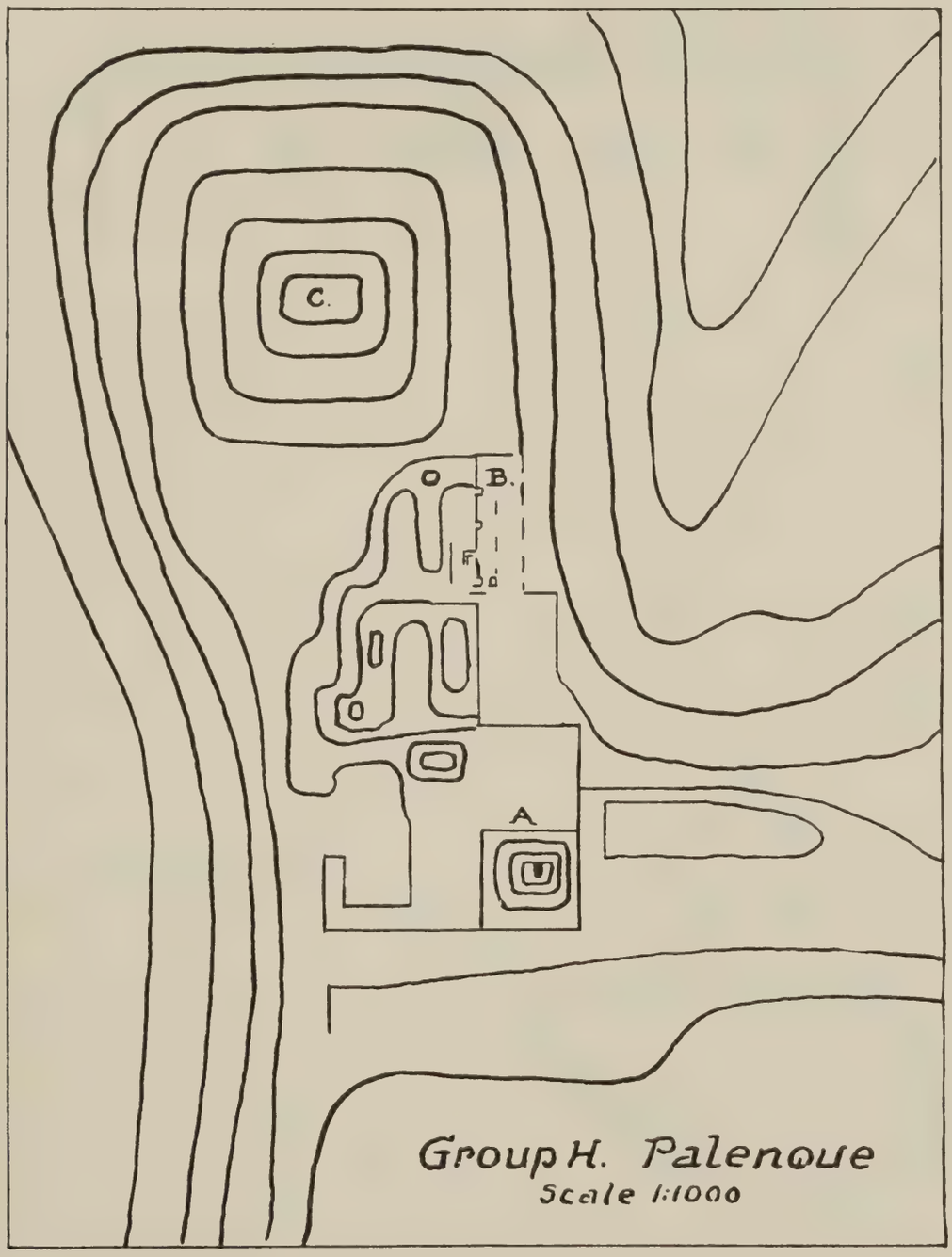


FIG. 153—Palenque, Chis. Map of Group H.

columns having the appearance of seats. At the points marked X-Y the walls show the lower part of a roof cornice, indicating that the northern end of the building is a later addition. The entire exterior passage is now in ruin.

At the southeastern corner of the group is a large mound and on the north side near the top of it is the entrance to a burial chamber. This vault shows

distinct sign of having been investigated, as the cut limestone slabs which once covered the burial had been torn up and thrown to one side. None the less, we made a careful search of the dust in the tomb, only finding a few potsherds and fragments of human bones (fig. 155).

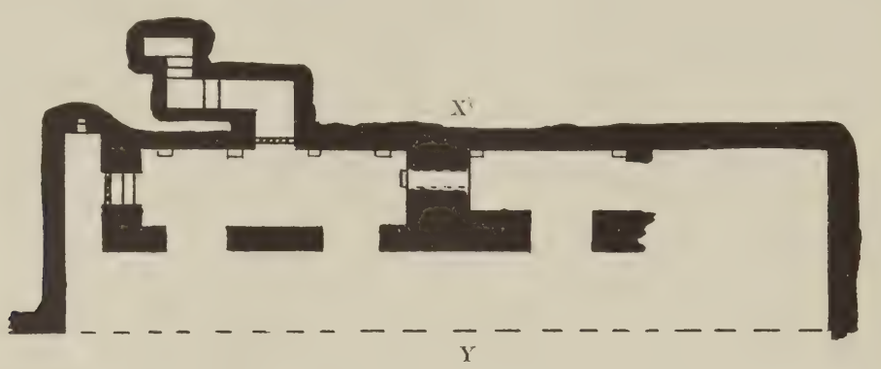


Fig. 154—Palenque, Chis. Plan of Structure B in Group H.

Between Group H and the pyramids south of the Temple of Inscriptions, at the southern end of the ravine mentioned, lie the ruins of an interesting structure, to which I have given the number XXVI on the map attached to my report to the Mexican Government. The walls of this structure are built of large stone blocks, with the use of comparatively little mortar. The building is in two stories, the roof of the lower story forming the floor of a terrace in front of the upper story, which stands on a solid masonry block. Narrow passages with stairways lead from the back of the lower rooms to the upper story. Only a few walls of the upper section are standing, and the whole part of this structure is so badly in ruin that it is not possible to draw its ground plan.

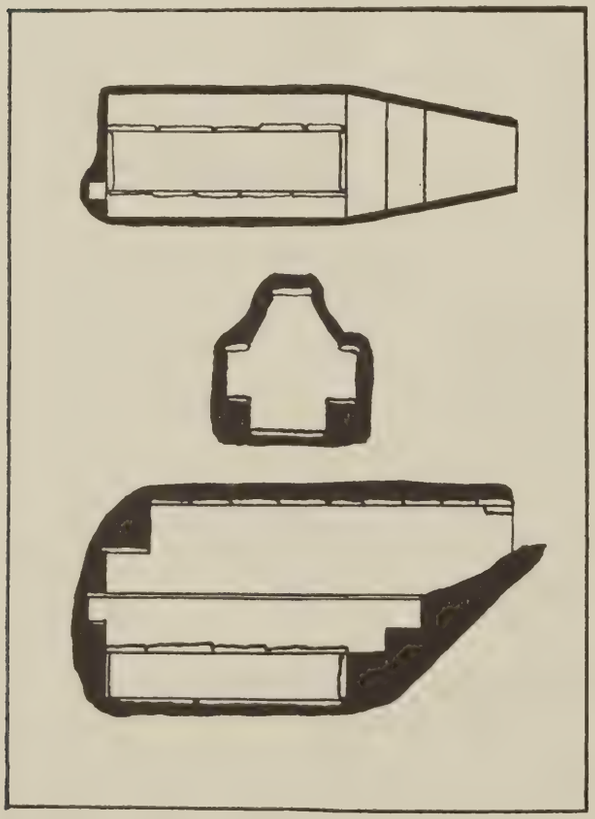


Fig. 155—Palenque, Chis. Plan of Burial in Mound A of Group H. (Scale 1:100).

The lower story consists of two galleries, of which the front one is now entirely destroyed. The back gallery contains one long room, a small room, and several passages. The whole structure is so much in ruin that it is difficult to come to any conclusion as to its use in ancient times.

Maudslay states that he has found burials in buildings of this kind, and it is possible that excavations will reveal these buildings to be a kind of catacombs (fig. 156).

Group I. As this group was found a few days before I had to leave, there was no time to make a detailed plan. It consists of various mounds arranged around courts, and a building was found somewhat like the one described in Group C, the only difference being that the building in Group I contained two, maybe three, parallel galleries.

There now remains only one building to describe. This is a temple lying on the mountainside between Group H and Group F. It had been reported by Maudslay, but as he does not give any plan of it, I give one in Figure 157. This temple faces north and stands on a terraced pyramid. Its eastern end has fallen, but so much is preserved that a complete ground plan could be made. Two stucco hieroglyphs were found on the outside of one of the door pillars, and on the western end of the roof stands a part of a roof ornament of unusual form. The Temple has two parallel galleries, and no vestiges of carved tablets or stucco hieroglyphs were found on its back wall.

As stated at the beginning of this chapter, only a condensed report has been given here of the discoveries made during my stay at Palenque for the Mexican Government; the object being merely to place this work on record for the benefit of future explorers of Palenque.

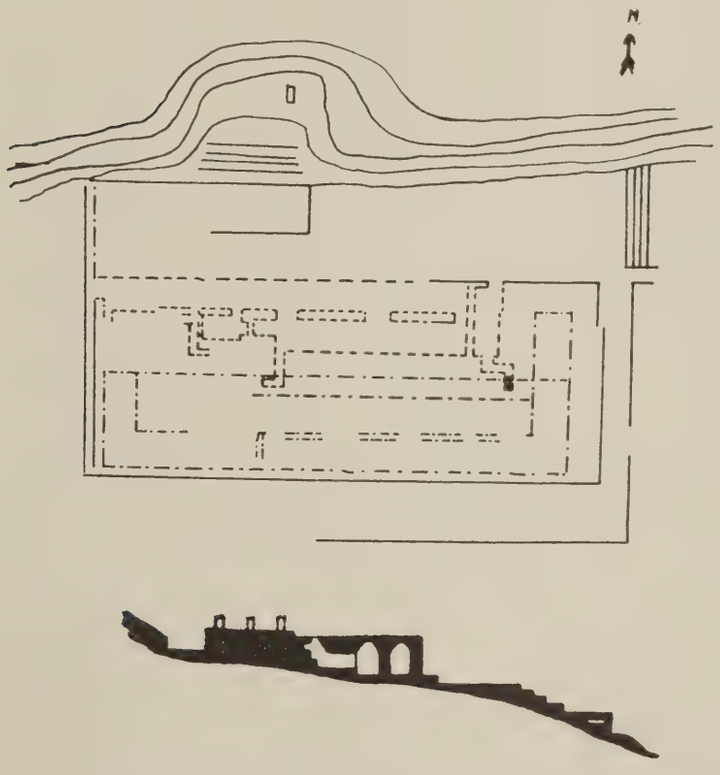


Fig. 156—Palenque, Chis. Structure XXVI. Scale 1:750.

Several interesting points presented themselves for detailed study. For example, it was noted that all the so-called subterranean chambers lie directly on a level with the temple plazas, or a few feet above this level. In no place had the Mayas made excavations for subterranean rooms, but everywhere they had built on ground level and filled around the building to give it the appearance of being underground.

The aqueduct has always been the cause of much admiration among explorers and visitors, and been considered quite unique. Drainage systems more elaborate than this were found in other parts of the ruins, and also a variety of bridge construction spanning the many creeks running from south to north through the ruined area.

As the roof combs on the Temples of the Sun and the Cross were in danger of falling, I had my Indians burn lime with which to reinforce these constructions. Lime kilns were built and though we laboured hard for about a week, only a comparatively small amount of lime was produced. This made me realize what an enormous amount of labour it must have required to produce sufficient mortar for all the great buildings in this city.

Early in the morning on May 12th we were ready to go to the ruins at Palenque. Both of us were full of expectation. To the writer, it was the joy of returning to a place that had become dear to him through previous visits; to La Farge it was the thrill of

going for the first time to this famous and beautiful ruined city of which he had read and heard so much.

As we rode out of the village, the captain of the local garrison and some soldiers joined us. We tried our best to shake them, but the captain explained to us, with much courtesy, that he felt much honored in visiting the famous ruins in company with people who appeared in the newspapers. Fame is a nuisance.

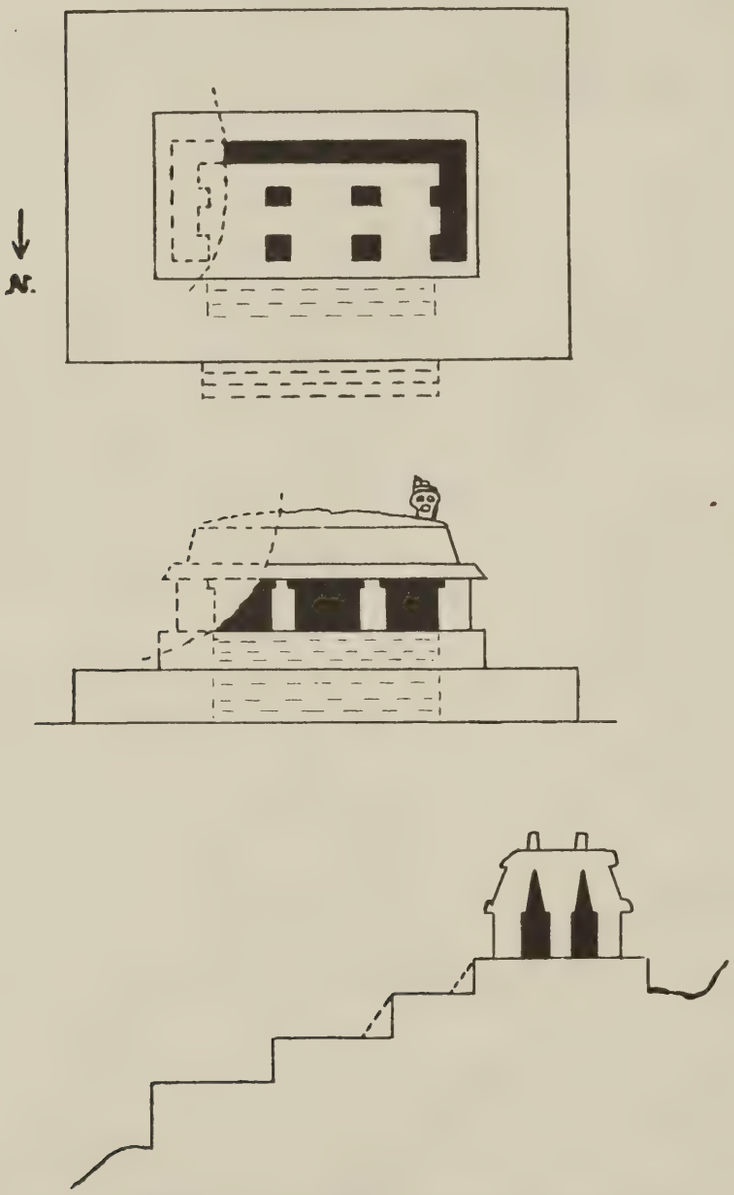


Fig. 157—Palenque, Chis. Temple between Groups H and F.

We forded the Michol and the Otolum creeks and then reached the foot of the natural wall along which the trail winds up to the ruins. Here we left our horses and climbed to the top, passing by the two tombs I had excavated two years before. Then we reached the main plaza. My old palm house had gone, and the small palm-roofed museum was falling; ants and tropical decay had wrought havoc in the small village I had built for myself and my workmen. The old caretaker and foreman, Leandro, was still there and received us with signs of joy.

Guided by Leandro, La Farge went around the ruins and I took the heavily-armed visitors to the Palace. Fortunately this escort quickly tired of climbing mounds and retired to the caretaker's hut where they settled down to eat and drink. By noon they had had enough of both the famous ruins and ditto men, and left for the village.

It was not our intention to spend much time in the ruins, and we certainly did not expect to make any new discoveries during our

short visit. It was therefore a pleasant surprise when Leandro told me that he had found three tablets with figures and inscriptions during my absence, and had hidden them awaiting my return.

These tablets were in the small museum lying face down among other slabs covering the floor. All three were fragments of larger tablets; two of them having hieroglyphs and a part of a figure carved on the surface of the third.

Tablet No. 1 had been found by Leandro close to the Otolum stream at the back of the Temple of the Sun. On its surface are two horizontal lines of hieroglyphs. Glyph A-1 is fractured and shows probably the co-efficient of 1 and the head-form of the Tun sign. B-1 has the co-efficient 9, followed by what looks like an Ahau. A-2 is unknown, and B-2 shows us the face numeral for 5 and the day glyph Eb. A-3 has face numeral 5 followed by the month Kayab. B-3 has the face numeral 6 followed by an unknown glyph. A-4, B-4, and A-5 are all unknown. We see here the date 5 Eb 5 Kayab (fig. 158). This date occurs in two other places at Palenque, the first being on the "Death Head Monument" where the date (9-12-19-14-12) 5 Eb 5 Kayab is at the beginning of the inscription.* The other 5 Eb 5 Kayab is found on Tablet No. 2 discovered by the Tulane Expedition.

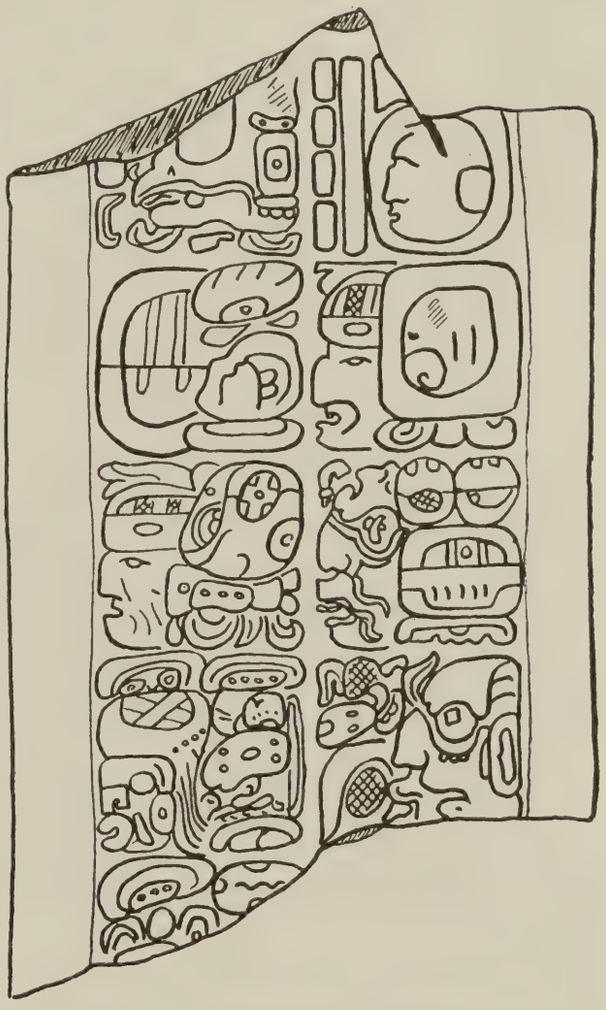


FIG. 158—Palenque, Chis. Tablet No. 1.

Tablet No. 2 (figs. 159 and 160) was found on the west side of the mound of the Temple of the Foliated Cross. It is a fragment of a tablet with two horizontal rows of hieroglyphs, and probably part of initial series. A-1, B-1, A-2, and B-2 are lost. C-1 equals 11 Uinal, D-1 equals 12 Kin, C-2 equals 5 Eb, D-2 equals 5 Kayab. This date reads (9-5-1) — 11 — 12, 5 Eb 5 Kayab.

*Maudslay, Vol. IV., Plate 90.

It is an early date for Palenque, and I doubt if it is contemporaneous, as the hieroglyphs are very well executed, and show the style of a much later period.

As to the date on Tablet No. 1, it is not possible to locate it definitely in the Maya calendar, though I am inclined to believe that the date is late rather than early.

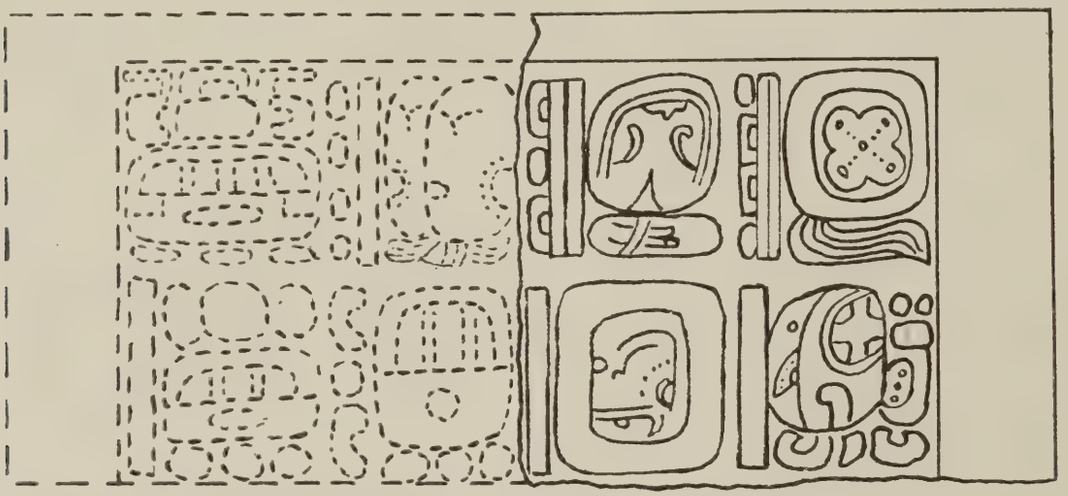


Fig. 159—Palenque, Chis. Tablet No. 2 Reconstructed.

An interesting feature connected with Tablet No. 1 may be mentioned. The glyphs A-3 and A-4 and parts of glyph B-3 were found to be covered with a layer of stucco nearly obliterating the design of the glyph (fig. 161). As it is well known that the stone cutter sometimes made errors in the inscription, I was anxious to see if there could be any difference in the line drawing on the stucco coating and the carving of the glyphs. We therefore carefully chipped off the stucco covering, but found it to be the same. Figure 161-a shows the tablet with the stucco covering and Figure 161-b shows it after the covering had been removed.

Fig. 160—Palenque, Chis. Tablet No. 2.

Tablet 3 was found on the front slope of the mound of the Temple of the Foliated Cross. It is a fragment of a standing figure carved in low relief showing the right shoulder and part of the arm of a man. At first it was thought to be part of the tablet found by Waldeck and drawn by him (reproduced by Maudslay, Vol. IV, Plate 86, left), but it turned out to be another. In 1923 the writer

found a small fragment of a tablet with a hand carved on the surface on the same mound and fortunately this fragment fits the one found by TUX this year. Both are shown together in Figure 162.

Measurements show that the two tablets now flanking the entrance of the church at Palenque Village came from the Temple of the Cross. Waldeck states that the tablets drawn by him belong to the Temple of the Cross, and the fragments found by us indicate that such tablets were also found in the Temple of the Foliated Cross. From this we have a right to believe that not only

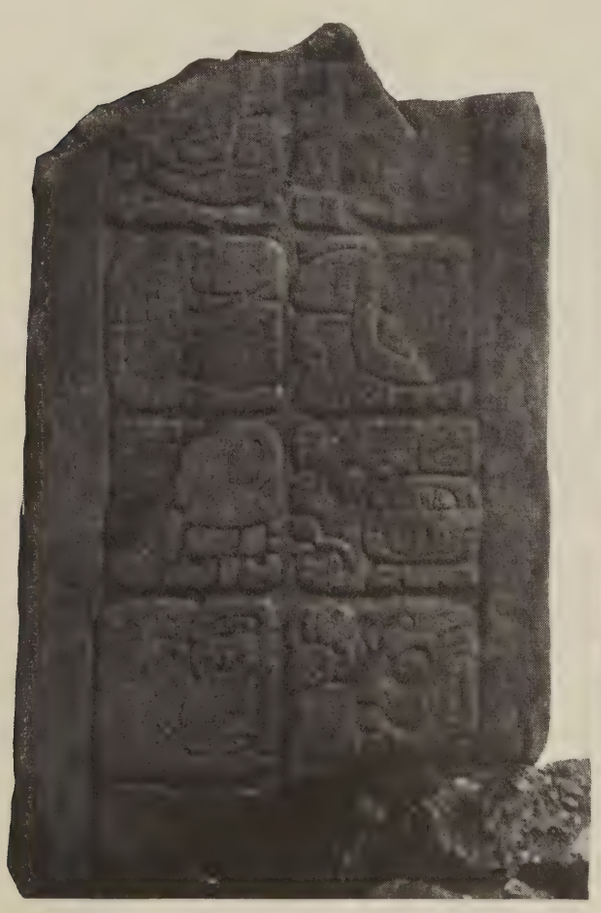


Fig. 161-A—Palenque, Chis. Tablet No. 1 with stucco coating.

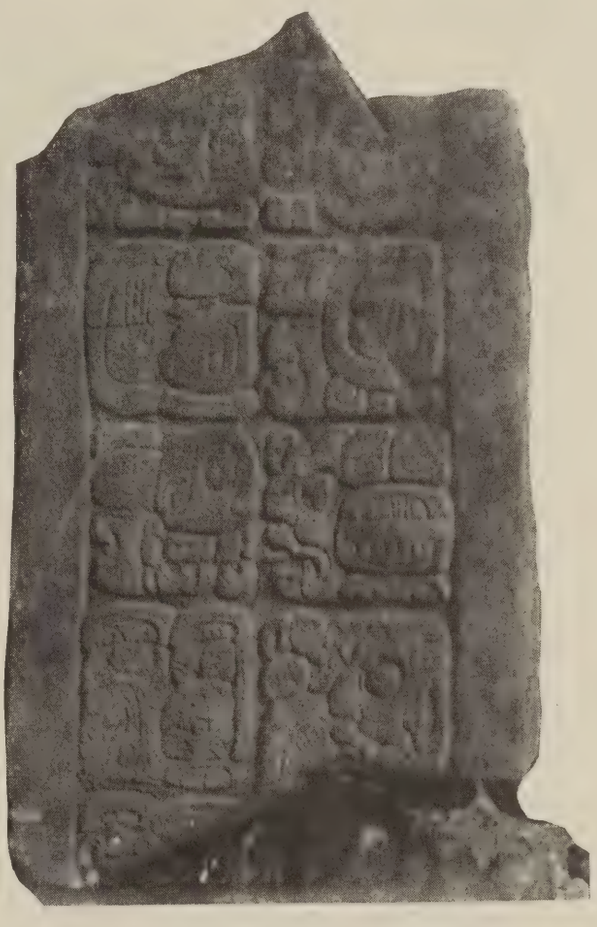


Fig. 161-B—Palenque, Chis. Tablet No. 1 after stucco coating had been removed.

did the sanctuaries in these three temples have carved limestone tablets on their back walls, but similar tablets flanked the doorways, each with one standing figure.

In House D, of the Palace, we found a small inscription painted in black on the back wall of the northernmost chamber facing the court. Traces of line drawing and colours can be seen on a large part of this wall, but only the few hieroglyphs shown in Figure 163 were distinct enough to be drawn.

An inscription similar to the one found in the interior of House E and published by Maudslay in Vol. IV, Plate 42, was found on a wall at the northern end of the western court. This inscription is enclosed in a border of red lines, but is so badly destroyed that nothing could be drawn.

Leandro, the caretaker, had done quite well in holding down the rank vegetation. It is a hard job, for the government unfortunately maintains only one man to look after one of the most remarkable ruined cities on this continent.

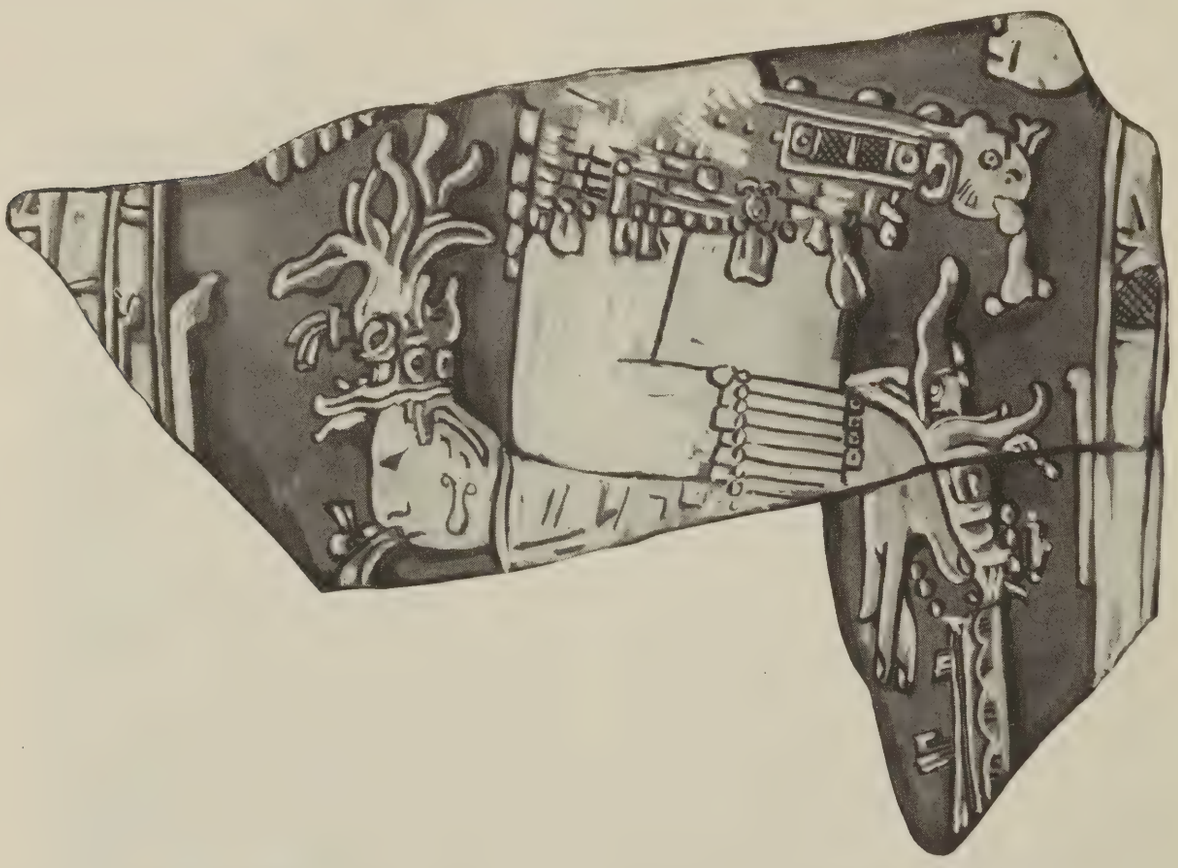


Fig. 162—Palenque, Chis. Tablet No. 3 and fragment of same tablet found in 1923.

We noted that several floors had been dug into quite recently, and that fires had been burned on the floors in some of the temples. Asking Leandro how this occurred he showed us the visitors' book, where we read the following:

"Excursion Oriente de Chiapas llevado a cabo por el Sr. Presbitero Eleazar Mandujano A. Abril 20, 21, 22, 23, 1925.

"Eleazar Mandujano A., Presidente; Jesus B. Martinez, Vice-Presidente; Victor Manuel Garcia, Fotografo; V. M. Figuerra y Galvez, Secretario; Carmen Ayanequi, Vocal (Voter); Juan Flores Castello, Vocal (Voter); C. Morales, Assistente."

This titled crowd came from Tila in Chiapas, where Mandujano is priest at the church, and had brought a train of about 30 Indians and a band of Indian musicians. They made their camp in one of the temples and sent part of their party out with the caretaker while the other part made excavations. We found waste scattered all around. Even the fair Doña Carmen, the lady love of the priest, had left a strip of intimate lacework on the floor. When they left they took with them four objects belonging to the local museum. Fortunately the caretaker discovered this and got them back by telegraphing to Salto de Agua, where the priest was arrested and held prisoner until the objects were returned.

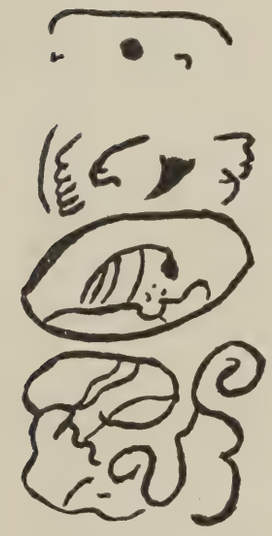


Fig. 163—Palenque, Chis. Painted inscription on the wall of a room in House D, Palace. (Half Size).

This for the Padre, most holy and learned man, supposed to be of the educated class, wandering around the country with a band and a mistress, "studying" ancient monuments.

It is more pleasing to turn a glance back to the days when the now ruined city was inhabited, and to visualize its rulers and people. The country was divided into many minor states, each more or less hostile to its neighbours. Each State was probably centered around a large city, like Palenque, and ruled by a chief or Halach Uinik. This position was hereditary, apparently handed down from father to son. Landa states in one place that the oldest son succeeded his father as ruler. In another place he says " the lords were the governors and confirmed their sons in their offices if they were acceptable," which seems to indicate that not the oldest son, but the most intelligent of the sons succeeded to the power. But he also states that the high priest Ahkin-Mai educated the second sons of the rulers in the learning of the priests. At any rate, the power lay within certain ruling families, which undoubtedly furnished both rulers and priests.

The orders of the Halach Uinik were executed by Batabs, or district chiefs. This position was also hereditary, and the Batabs governed territories within which they held court and settled lawsuits. They were expected to visit the Halach Uinik and render report to him of their districts, at the same time acting as his advisors.

After the Batab came the Ahkulel who saw that tribute was paid and that the Batab's house did not lack supplies. It was customary that the community provide houses and food for the rulers, and also maintain a certain number of soldiers in each village. These soldiers,

selected among the young men, should always be ready for duty and were under the command of a Nacon or war chief, who was elected for three years. In time of war all able men were called to fight. Another public servant called Nacon held this title for lifetime and had the duty of opening the breasts of the sacrificial victims.

When standing among the ruins of an ancient city, it is so easy to let your imagination run back to the days when it was throbbing with life; when men and women hastened to and fro, and the buildings were occupied. The more one knows of those ancient inhabitants, the more vivid the picture will be. One visions the splendor of the rulers, high priests, and warriors among magnificent buildings, but one is apt to forget the sweat on the brow of the workmen and slaves who erected the beautiful buildings, and the men who tilled the fields or hunted in the forests to provide food for the table of nobles and workmen.

Culture is the result of an abundant population and food supply. There must be enough food to feed both farmer and city labourer before there can be leisure to produce architecture, sculpture, and science. The rich soil of the tropics furnished an abundance of corn, and the great forests were full of game. Only a part of the population were needed to produce the food. The remaining part could therefore dedicate themselves to manual labour, as builders, stone cutters, potters, and jewelers, and a small minority to their chief science, astronomy.

Time is another thing we are likely to forget when we stand in a ruined city. We see all the great buildings around us, and marvel at their size. They appear to us as if grown up overnight a thousand years ago. But look!—there at the entrance to the aqueduct many slaves are hauling a huge stone block and trying to put it in place; stout vines are tied around the block; a foreman directs them with loud cries; all the slaves lay their strength to the ropes, and the block moves a few feet. Over on the main plaza a large lime kiln is burning. Hundreds of trees, cut by burning and with stone tools, are stacked up around blocks of limestone quarried with stone hammers. Long lines of wokmen carry stones and baskets of lime and dirt to build the pyramid of the Sun Temple. From the hills we hear the song of the workmen in the quarries, cutting tablets by the slow process of chipping stone against stone.

The pyramids and temples were built in honour of the ancient gods. The palaces were domiciles of the rulers and priests. Common man lived in palm-thatched huts such as the Indians use today. The stone buildings stand as a glorious monument to the Maya race. The houses occupied by common man, whose strength was put into

the building of the temples, have all disappeared centuries ago. When we look out over the ruins of the holy city of Palenque, the original name of which is unknown, we must realize that what we see is only that section of the town which was dedicated to the worship of the gods. The town where common man lived, the you and I of those days, probably lay down on the lowland.

High above the palm roofed town the holy city would be hidden behind the fogs of early morning, and as the sun climbed higher the mists would rise like a curtain disclosing the mountainside where rows of temples painted in many colours shone in the sun against a background of green forests.

O.La F

Chapter VIII

INTO THE BIG FOREST

From Montecristo on the Usumacinta river an oil company has built a motor road through the village of Palenque to their camp, 8 kilometers to the southeast of the village. We rode along this road on level ground till we reached the Chacamas river, which flows out of the mountain behind Palenque ruins, towards the northeast and north until it joins the Usumacinta. It can easily be forded in the dry season, and the oil company's tractors run through it with equipment to their camp. During the worst of the rainy season it has to be crossed in a box suspended on a cable.

Fig. 164—Zona Sala, Chis. Oil Camp.

Just after crossing this river the first hills are reached, and soon one climbs at a steep grade, so steep in fact that one would hardly believe that tractors could make it, and we begin to enter the big tropical forest.

To reach the camp we crossed a sizeable mountain range, but the road being broad and good, and the animals in fine condition, this was easy. We rode over a wall built of rough stones across a pass in the mountains. It had the appearance of being a defense thrown across the pass to protect the valley behind. On either side

of this pass on the hill tops are groups of mounds arranged around rectangular courts. The vicinity is rich in caves and it is told that a Belgian geologist, in search of oil indications, discovered such a cave filled with pottery. The writer had visited several of these caves during a previous trip, but found no signs of ancient occupation.

Shortly after crossing the wall we came in sight of the oil camp and the drilling tower that lies on the floor of a small valley. The camp is perched on the top of a hill, and an extensive clearing has been made and planted with grass, the whole place breathing an air of order, an unexpected thing in this part of the world (fig. 164).

Our cries brought our friends out of the houses, and we were soon seated in the mess house with a savory meal before us.

Fig. 165—Zona Sala, Chis. Clay Figurine (17 c.m. high) and vase (18 c.m. high) from a grave.

The camp lies on property owned by one Señor Sala, hence the name, Zona Sala. During excavations for the staff houses' foundations on the hill some graves were encountered. In one of these a clay vase and small figurine came to light. The vase is 16 c.m. high; its colour is orange and it has faint signs of decoration (fig. 165).

The figurine is an exquisite example of the Maya potter's art. It represents a woman holding a squatting child with her left hand and a small dog under her right arm. It is of terra cotta coloured clay, and blue paint can still be distinguished on her apron. The figurine is hollow, having a hole in the back for use as a whistle, and belongs to a class of pottery found in various Old Empire localities. They are all well executed, and very realistic. A remarkable thing about them is that in every case where a woman holds a child, the child has aged features and wrinkled belly. Can it represent a goddess holding her son, an aged god, by the hand? (fig. 166).

At Zona Sala camp we rested for some days in order to put our notes in order, and to make arrangements for our journey into the mountains and forests. The employees of the camp were extremely helpful to us, and we will long remember the pleasant days we spent

in their company. Mr. Campbell, whom we had met several times before and who accompanied us from Salto to Palenque, wished to join us for a part of our trip, but unfortunately his work did not permit this.

We spent one day in the ruins at Xupá, guided by Mr. Campbell. These ruins are two km. east of the camp, and have previously been investigated by Teobert Maler, who gives such an elaborate description of them that later writers have been led to believe that this city was quite large. The group, though, is of moderate size with only one temple partly preserved (fig. 167).*

Fig. 166—Zona Sala, Chis. Clay Figurine (whistle).

Maler describes and reproduces a stone tablet which he found on the slope of the temple mound. This showed a standing figure drawn with grooved lines on the surface of a limestone tablet. An extensive search was made, but it had disappeared. Local reports say that it was removed by a man who took it to his plantation on the Chacamas river.

As Maler does not give a ground plan of the Temple, we at once set to measure it. The arrangement of its rooms are somewhat unusual in that the axis of the side rooms runs at right angles to the axis of the back room. In the center of the back room is a small sanctuary, which can be entered through a hole in its roof. Its walls were painted red, and a stone lintel covered the doorway now blocked by the fallen roof. The building is badly destroyed, but we were able to get a fairly good plan and section of it (fig. 168).

*Maler, 1901, Page 17 ff.

The Temple faces east, towards the rising sun, and a stairway leads from its doors down to a Plaza. We scouted around for monuments and stelae, but did not succeed in finding any.

At noon Mr. Mitchel, in charge of the Zona Sala camp, appeared with a luncheon basket that proved him to be a connoisseur of good food. We went to the banks of the small Xupá creek, and in the shade of overhanging trees enjoyed another "civilized" meal.

Along the left bank of the creek is a wall, undoubtedly built in order to protect the city from being flooded by the swelling of the river during the rainy season.

In the afternoon we returned to the camp, where we ran into some Bachajon Indians on their way to Finca Encanto, our next station, and we succeeded in persuading them to wait two days for us and act as our guides.

Then our horses were again shod, and a final reduction was made of our cargo. Ahead lay dense forest and bad mountain trails, so we discarded all equipment that was not absolutely necessary.

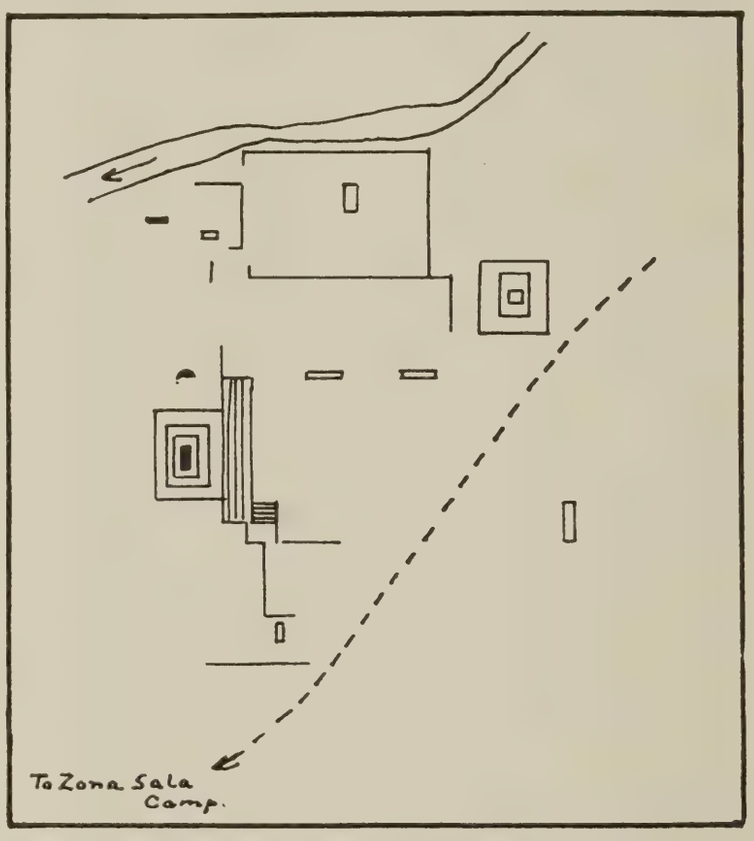


Fig. 167—Xupa, Chis. Rough map of ruins.

Many of the labourers at the oil camp are Bachajon Indians. This tribe is reported to be a bad lot; the ones who have built their small settlement by the oil camp supposed to be the worst of all, having been ostracized from the tribe because of being murderers. Not that it matters much among the Bachajons to have murdered one or two; but there seems to be a limit, and this they are said to have passed.

The only work these Indians are good for around the camp is clearing bush and collecting timber and firewood. They walk about in a stolid way, and always gather to stare at the fierce monster, the tractor. When this backfires, they all take cover in the forest.

From the hill on which the camp houses stand we had been looking down over a small clearing, beyond which stood a wall of forest and behind this rose the Cojolite mountain. Some years ago I had followed the direct trail up over the Cojolite pass (fig. 169) to the Finca Encanto. This road was known to travellers, so we preferred to make a detour by an obscure Indian trail in the hope that we might come upon ruins.

Our animals got an extra meal of corn, and our Indian boys some large balls of "posole," corn dough which they mash in water and drink, one of their main foods when on the trail. Then we jumped into the saddles and while our Indian guides led the pack animals towards the forest wall, we bade farewell to our American friends who had treated us so royally, and hurried after our outfit.

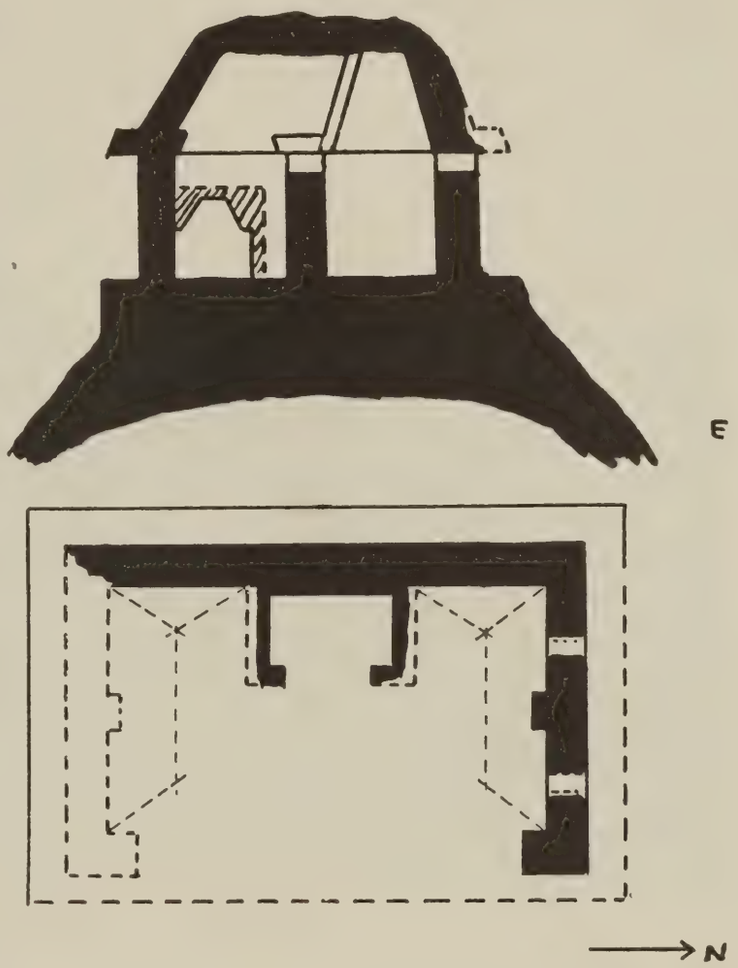


FIG. 168—Xupa, Chis. Ground plan and section of Temple. (Scale 1:200).

At first we followed the trail to Xupá which was fairly open for some distance beyond the ruins. Then we reached a point where no cutting had been done and our Indians had to get out their long steel machetes, one of the few things the Indians have adopted from our civilization. They call them "Colyeen," getting this name from the American firm named "Collins" which is stamped on the blades of most of the knives used in Central America. The Mexican traders who sell the knives to the Indians read the double l in Collins in their Spanish fashion as ly, hence the name Colyeen.

For some hours we followed the valley towards the east, then swung due south and started to climb towards a mountain pass. Luckily this climb was not nearly so steep as the Cojolite pass.

Here and there we had to stop to cut our way around a fallen forest giant, but the going was comparatively easy.

Reaching the top of the pass we frightened a drove of wild pigs, or pecary, the kind which have a musk gland on their backs, from which they emit a white, foul-smelling liquid when frightened. They rushed away grunting and squeaking, and my attempt to get one with our .22 rifle was unsuccessful.

As we descended the southern side of the range the faint trail before us turned more to the southwest, and this was the main bearing of our travel for the next two days.

Fig. 169—Zona Sala, Chis. View of Cojolite Pass.

Chicle trees became frequent, and with them signs of the activities of the chicle bleeders.

Chicle is the name of the raw material for chewing gum, and is tapped from a tree called Chico-Zapote, found only in the Central American forests. It is a tall tree having very hard wood, so hard in fact that when dry a nail cannot be driven into it. The ancient Maya used the wood of this tree for beams and lintels in their temples. Its gum was also used by them in offerings to their gods.

This sap is tapped from the tree by the so-called Chicleros, or chicle bleeders. They climb the tree with the help of such spurs as are used by linemen climbing telegraph poles. With machetes they

cut zig-zag grooves in the bark of the tree, and snow-white gum oozes out in these scars down into a small bag tied to the foot of the tree. That sounds easy and simple, but when one has watched these men and the life they lead the story is quite different.

The tree produces gum only during the rainy season, which means that the chiclero has to spend the worst time of the year in the heart of the forests, sheltered by small palm roofs, living far from supplies, and having to buy these at exhorbitant prices. Day and night it rains, and the chiclero is not far from being an aquatic animal. Generally he is a beast. All kinds of riff-raff run together in a chicle camp, mostly men who are "wanted" somewhere by the law. Fights in the camps are frequent, drunkenness is usual, and stealing and smuggling are daily occurrences.

When he has gathered his bags with the white gum, the chiclero boils it down in small pans, and finally melts it together in a block of a dirty brown colour, weighing 100 pounds. Anything goes into the boiling pot to make the block a little heavier, and it is fortunate that the raw gum is thoroughly cleaned and sterilized before it is placed on the market.

Two blocks make one mule-load. From the collector's camp these blocks are hauled out to the rivers, often requiring days and weeks over trails where the poor mules sink to their bellies in mud. Sometimes enterprising bandits hold up trains of 20 to 30 mules and mules and gum disappear, leaving only a few dead chicleros as mute records of what has happened. Fantastic are the tales that can be heard in the evening around the chicleros' camp fire, and most of them are true.

Chewing gum and Maya archaeology are closely related, strange as it may sound. When the Chiclero wanders around the forest on the look-out for zapote trees, he often runs across ruined buildings, stone monuments with inscriptions, or large pyramids. When the season is over he goes out to the small towns along the edge of the forest, and there he runs into the archaeologists who start into the forest as soon as the weather is dry enough to allow them to work with their cameras and other equipment. Often the chiclero guides the archaeologist over the trails he has broken in his efforts to satisfy the gum-hungry world. The waterhole which served the chiclero now serves the archaeologist, and the millions of ticks which were brought to the waterhole by the chiclero's mule team hungrily attack the white skin of the explorer.

We rode towards the sun all day, making a great semi-circle around the end of the Cojolite range. La Farge and I each shot

a faisan, the large bird called curassaw in English, and "ish" in Tzeltal.

Our Indians were a cheerful crowd. All day long they would walk ahead of us cutting the trail; now and then stopping to cut the heart out of a small palm and eating it as a great delicacy, especially when fresh. At other places they would break open the huge nests of the white ants and with their machetes dig for bags of honey deposited by some small bees who favor these ant nests for their hives.

About four o'clock in the afternoon, we stopped to make our camp on the banks of the small Mistolja stream. The horses were unloaded, and while some of the boys made a clearing where we rigged up our fly-sheet, others cleaned the two birds we had shot and planted the meat on sticks by the fire. Others went into the forests to cut leaves of the breadnut tree (Ramon) and a certain kind of small palm to feed our animals. In the big forest there is no grass; the animals have to be fed on leaves. This is sufficient for mules, as the sturdy animals can stand such a diet for many days, but horses very soon lose weight.

At nightfall we sat around the campfire, eating our birds, and listening to the Indians chatting. It was our first camp in the real, big jungle. Soon we climbed into our hammocks, and for a time lay listening to the thousand sounds of the tropical night, the monotonous singing of insects, small noises of nocturnal animals, and the murmur of the stream close by our camp.

Evening in the jungle is beautiful; dawn is magnificent. We sat wrapped in our blankets drinking coffee when light began to appear high up in the tops of the trees, at first very sparsely and a pale gray. Little by little the light sifted down, and as it reached the bottom of the forest the sun threw a glimmer of gold on the tree-tops. The night insects became quiet, and the birds began to fly around and sing. He who has watched the daily awakening of life in the jungle will never forget it.

The day was a strenuous one, for literally every step we advanced we had to cut down undergrowth. It looked as if every tree which had fallen for the last few years had chosen to fall across the faint trail we were following. Sometimes we could hardly distinguish the trail, and once we followed a path leading towards the north hoping that it soon would turn in the direction we should go. It did not, so we did.

In one place we came across large mud holes, whirled up by the hoofs of innumerable wild pigs, one of their great bathing places. No birds were seen all day, so when we discovered some large black-

faced monkeys (*batz*) high up in a tree, our Indians asked us to shoot one for supper. I fired shot after shot at one with the rifle and hit him, but the brute hung on with all four hands and his tail. Finally he came down with a thud, and La Farge scornfully suggested that it was the weight of the lead I had pumped into him which had brought him down. One of the Indians loaded Mr. Batz on his back, and we trotted along until we reached the Bascan river.

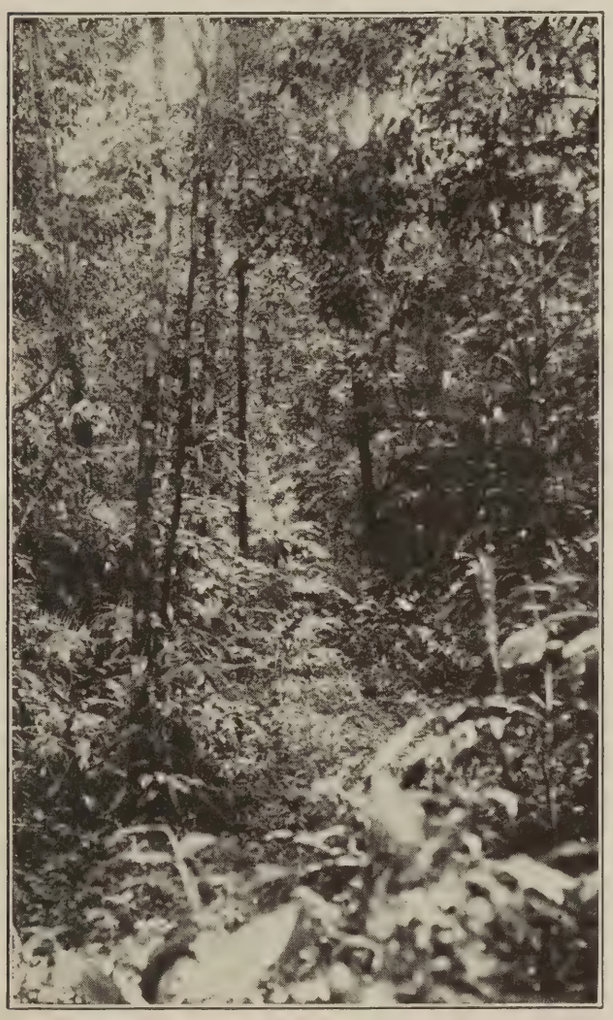


Fig. 170—The dense jungle.

The Mistolja and the Bascan run into the Tulija river, above Salto de Agua. The crossing of the river was negotiated with some fear. The flow was swift, and there were deep places, but we were fortunate in getting everything across without it being wet. The Indians undressed and bundled their clothes on their heads.

A short stop was made for the Indians to drink their posole, a habit we were also acquiring. This drink is the midday meal. One meal in the early morning, another when in camp in the afternoon, and posole for lunch. If we stop at noon to have a regular meal, the result will invariably be that the Indians will "call it a day," and it is next to impossible to get them started again.

We followed the left bank of the Bascan, now headed towards the west, hoping to reach the direct trail from Palenque to Finca Encanto. The forest was nearly inpenetrable and it took us a couple of hours to cover a little more than a mile (fig. 170). As soon as we saw that we would not be able to reach the main trail before dark, we made camp on a small stream running out into the Bascan, and hardly had we got our tent-fly up before a strong rain started. There was no time to build a palm-leaf shelter for the Indians, so we all huddled together under the tent.

When a lull came, two of the Indians rushed away to skin the monkey. It is, by the way, an ugly sight to see a flayed monkey. Lazaro looked after his dear "niños" as he was calling the horses, and we helped the other Indians with the firewood and cutting leaves for shelter. When a second burst of rain came everything was in order, and steaks of monkey meat were roasting on sticks under a roof of leaves built over the fireplace.

The Bascan Valley appeared to be quite broad in some places and somebody will undoubtedly find ruins in it one day, but we did not have such luck. The river is full of small falls built up of travertine, with long stretches of water navigable for canoes. With some portage it could well have been used for transportation in olden times.

It was a great relief to reach the main trail about eleven o'clock. The manager of Finca Encanto, Mr. Linke Timler, expecting our coming, had sent Indians out to do some clearing along the trail. None the less we found that the hardest was yet to come. The climb up to the Mirador pass was steep, the soil slippery from the rain, and the new cutting difficult to negotiate in many places. Up and up we climbed. Our animals, accustomed to the level trails of Tabasco, had much trouble with the rocky climb. Again and again they slipped and tumbled. Then we had to unload them, which was difficult, as they always found the worst places to fall. When freed of the pack, we had to set them up on all fours, and again put the load on. Innumerable times we had to stop to swing our heavy pack boxes on the beasts, generally standing in anything but a level place. We sweated and swore, packed one animal and advanced about a hundred meters, only to find that another animal had fallen. It certainly tested both our patience and strength.

Not until after three o'clock did we reach the top, and then we had to change the cargo from two of the pack animals to two of the saddle horses which were not so tired, as we had climbed on foot most of the time.

From the highest point we slid and rolled down for about an hour until we reached a small arroyo, Zachalucum, where we made camp for the night. We were not the only travellers at this place. The "hotel" was already occupied by four Indians sitting under a palm-leaf shelter cooking their food as we arrived. They hardly stirred at our approach, though we must have been a formidable sight with our animals and guides.

Soon the camp was in order, and our boys planted the legs and arms of the monkey we shot the day before on sticks around the fire for roasting.

We were up at dawn, and saw our neighbors preparing for departure. A bite of cold meat and a gourd full of posole was their breakfast. Then they gathered their belongings into nets, loaded them on their backs, and trotted off for a day's march.

After a short ride from our camp we reached a descent, famous because of its steepness and because of the grim story of how the rebel general, Pineda, lay in ambush below when the federal troops tried to catch him. The soldiers coming from above could only advance in Indian file, and as they were shot one by one, rolled down the mountainside giving place for the next one. Quite a practical place for an ambush. Now a few bones lie as silent records of the battle.

Down we went and again a horse tumbled. Then up a hill and another horse slipped. At last we were down in the Tulija valley, and halted on the river bank where the boys drank their posole.

We crossed without difficulty. A short distance further on we reached a road, a real road laid with corduroy, and alongside which grew thick juicy grass. Our poor animals immediately went after it and we had difficulty in keeping them going, but as we were now near our destination, the Encanto ranch, where the horses could rest and get plenty of fodder, we drove them on.

Crossing another stream we rode along a broad, well made road lined with rubber trees and royal palms. As we neared the finca, the dogs began to bark, and when we rode up in front of the main house, we were most cordially greeted by an old friend, the manager Mr. Linke Timler.

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Chapter IX

ENCANTO

We were now in a region where maps show either a blank or are drawn from the mapmaker's imagination. Rivers run at the bottom of long narrow valleys enclosed by limestone mountains. Only from a few isolated peaks is one able to get an idea of the country, and then only the major outline, as all details are covered under a carpet of dense forests.

The upper Tulijá valley is typical of the tropical section of Chiapas. The Tulijá river forms the main artery with its sources extending far into the unknown forests towards the southwest of

Fig. 171—Finca Encanto, Chis.

the Encanto ranch. Several large rivers join it below the ranch; from the south the Agua Clara river, or San Pedro Savana, and from the northeast the Bascan and the Mistolja. Above the junction of the Agua Clara and the Tulijá, the latter is sometimes called Encanto river, but as the native Indians call it Tulijá, we have retained this name.

Below the village, San Pedro Savana, the Tulijá runs through a gorge and forms a fall just as it emerges from the mountains into

the lowlands of Tabasco. At this point is the town Salto de Agua. Finally, the Tulijá runs into the Rio de Macuspana below the town of the same name.

The Encanto ranch lies on a hillside on the left bank of the river, overlooking some large clearings planted with grass. From the trail one reaches the main house through a picturesque boulevard lined with royal palms (fig. 171). The main house is an attractive bungalow covered with flowers, and by its side lies the store. Native huts lie in a horse-shoe along a hill enclosing a meadow to the southeast of the main house. Here, in the heart of the big forest, one suddenly finds one's self in the most comfortable surroundings. Mr. Timler, who has charge of the finca, at once made us feel at home. We were overwhelmed with the comfort of the place, and the conveniences of a well run country home appeared as luxuries to us.

Mail does not come often to Finca Encanto, so we were news. We had to tell about the latest happenings in Tabasco, and were told about the activities on the finca. Of the great outside world Mr. Timler was better informed than we, as he had two quite good radio receivers installed in one of the rooms. Here, a canoe trip of five days down the river from the nearest town Salto de Agua, and ten or twelve days from the coast, he would sit and enjoy concerts played in Mexico City or in some southern town of the United States, and receive the latest world news.

During the dry season the powerful electric disturbances in the air make it anything but a pleasure to try to pick up a radio message, and I am afraid that we disappointed Mr. Timler very much by losing our interest in his sets after we had tried them a few times.

We spent a day of rest by collecting a list of words of the language of the Indians. These belong to the Tzeltal tribe, and come from the Bachajon district. We went over our notebooks also and collected from Mr. Timler and his assistants, Don Arturo Tovilla and Ciriaco Aguilar, some information on ruins recently discovered in the region.

It appeared to be fertile ground for our work. Several trails had recently been cut into the forest in order to ascertain its value in mahogany, and during this work ruins had been found, so at once we made plans.

Mr. Timler accordingly provided us with a large dugout canoe, with two deck chairs in it, and a huge lunch basket. As propelling power we had three Indians poling and paddling, and one Indian aft with a steering oar. This latter, named Sebastiano Guzman, was the chief and also an important medicine man among the Encanto Indians.

The Tulijá river is narrow until its junction with the Agua Clara (fig. 172). The current was swift and we flew along, several times shooting small rapids. In an hour and a half we reached the much broader and more sluggish main river, when progress became slower. The banks of the river were covered with tall cane, 10 to 15 feet high, Caña Brava, as the Spaniards call it.

Before noon we landed at Finca Viena, formerly a cattle and coffee ranch. The finca lies at a short distance from the river at the foot of a vertical cliff over the edge of which a small stream falls in beautiful white cascades. From a distance it looks as if the water falls right down onto the roofs of the buildings.

Fig. 172—The Tulija River, Chis.

As we neared the house, a man came walking out towards us, and we saw another man jump on a horse and gallop along a trail leading up the mountainside behind the ranch.

The first of these men was the caretaker of Chuctiepá ranch, lying in the mountains behind Viena, and towards which we were headed. He started to question us, and soon made it plain that we were not at all welcome. He told us that he had instructions from the owners of the ranch that nobody could go near it, and in every way tried to stall us. We explained that the purpose of our trip was to investigate some ruins reported near Chuctiepá, and by mentioning several

prominent men of the region, we seemed to gain ground with him little by little.

He eased up a bit and invited us into the office where we opened our lunch basket, and settled down to watch things develop while our host continued his cross-questioning.

We thought that he must have some political refugees hidden away somewhere up the trail and wanted either to get them out of the way, or to warn them of our coming. Now, political refugees in these parts of the world usually mean a small body of heavily armed men, who have been driven out of the country by the government and are on their way back to start new troubles. Such noble distributors of free tickets to heaven are, as a rule, inclined to follow back trails, and therefore, when approached in the right way, may furnish data of interest to exploring archaeologists. On the other hand, they also may be quick to hand out a free pass before you ask for it. Chances are about 75 to 25 in favour of the free pass.

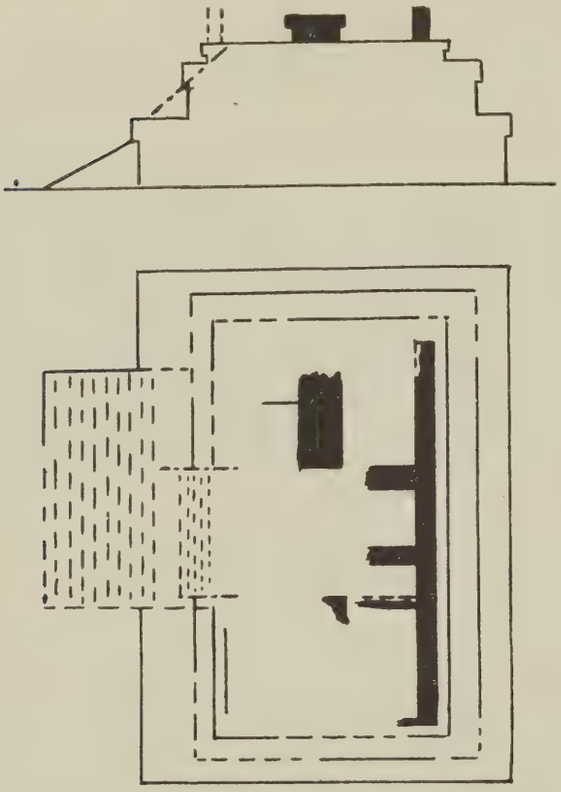


Fig. 173—Chuctiepa, Chis. Plan and section of Mound 1.

Being well armed with our .22 calibre riflle and a trench pick, we started towards Chuctiepá after the fleeing man, guided by the caretaker, who rode behind us.

Up the mountain trail and onward we wandered. Nothing happened. We strolled along in the baking midday sun, and still nothing happened. We reached the ranch house of Chuctiepá, and the caretaker invited us in for a lemonade—a most prosaic, but none the less welcome thing to have happen when you have been expecting to run into an ambush at every turn of the trail.

The fleeing man passed us on the way back to Viena shortly before we reached Chuctiepá, so we thought that he had warned the refugees either to take cover, or not to worry about the two American lunatics who were searching for old stones.

By the time we had finished our lemonades our host was apparently convinced of our complete madness and harmlessness, so he led us over to a field close by the ranch. Here were several small

terraces, and one large cluster of trees in the center. We proceeded to the edge of the forest, and immediately upon entering reached a large terraced pyramid with well-laid walls of stone. This faced approximately south, with a stairway on its southern side. On top of the pyramid was a low wall, and so little debris that only a building of perishable material could have stood here. The detail plan and section of this mound (fig. 173) shows that it is not strictly symmetrical, a somewhat unusual feature in Maya mounds. Also the walls on the top of the mound are low, and the central wall looks more like a table than a wall. There was probably a simple sanctuary against the back wall.

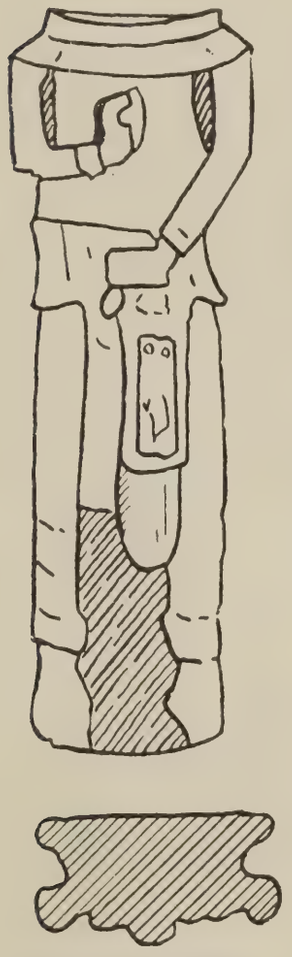


Fig. 174—Chuctiepa, Chis. Fragment of Stela.

Going towards the south from this pyramid (No. I) we reached the edge of a terrace and a ruined stairway leading down to a Plaza. We asked the caretaker if there were any monuments at this place, and he told us that one of the former managers of this coffee plantation, Mr. Albert Penny, a Britisher, with his wife had often searched the ruins for monuments but never found any. We therefore made a search along a line due south from Pyramid No. I, and great was the caretaker's astonishment and our joy when we discovered part of a stone figure with its head missing (fig. 174), and in front of this a square stone altar, with a circular hole in its center. The lower part of the figure is roughly pecked, and appears to fit into the circular hole in the center of the altar. This figure is much like one found at Tortuguero, and also has characteristics familiar to Toniná, as we shall see.

La Farge discovered the altar which lay face down. Turning it, we saw a row of hieroglyphs along the edge of all four sides of its top. Inside this border are four pairs of glyph blocks, somewhat smaller than those along the edge.

The altar is approximately 30 centimeters thick, and on all four sides are bands of hieroglyphs. Unfortunately all are badly effaced. There appear to have been dates along the sides, and glyphs without calendrical significance on the top (fig. 175).

The drawing of the hieroglyphs was difficult work, and one that really did not repay the labour as the stone was so badly weathered that only a few glyphs could be distinguished.

Mounds II, III and IV enclose the plaza. Of these mounds II is the highest, with a stairway on its eastern side. Mound III faces north, and mound IV is a low terrace. North of this terrace lies a similar terrace (V on the map) in the southern side of which is a small vault, probably a burial chamber.

North of Pyramid I rises a range of hills and south of Mound III runs the small creek, Arroyo Chuctiepá, which passes by the ranch house and empties into the Tulijá river by Viena.

To the west of this group of structures lies a mound of rough contours, and further west is the large cluster of trees already mentioned. This group of trees hides a large terrace mound, on the top

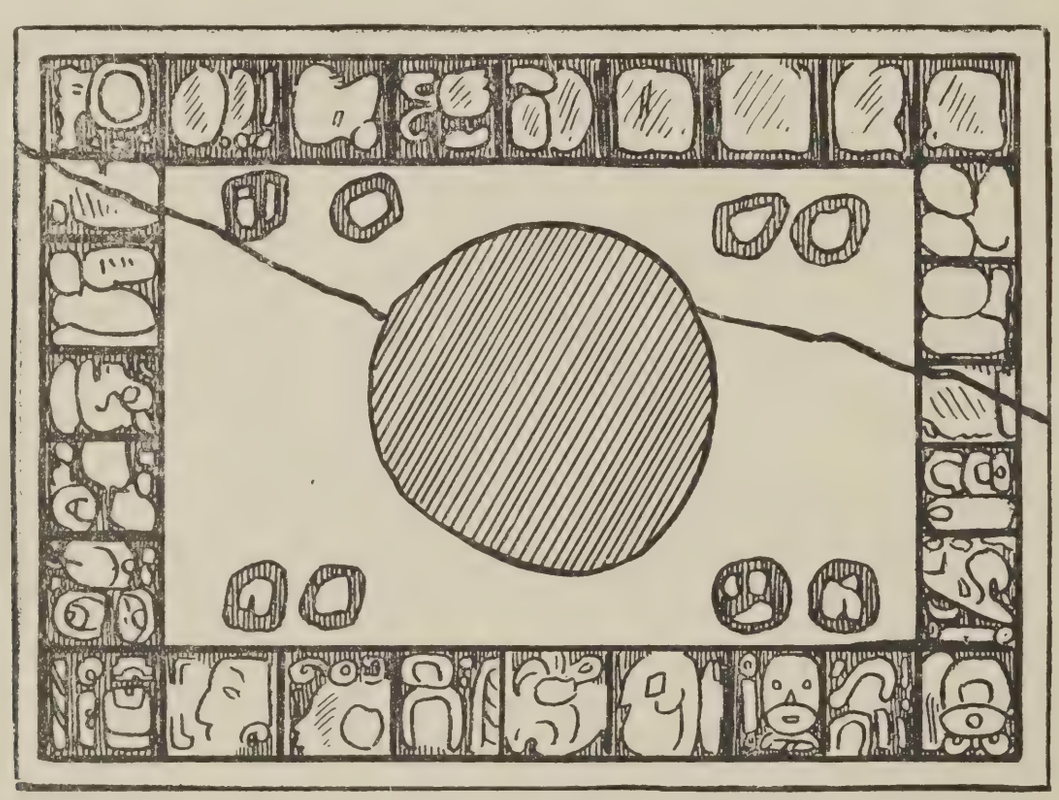


Fig. 175—Chuctiepa, Chis. Altar.

of which are several pyramids. A stairway on its western side led to the top of the mound. As we reached the level top, we first encountered a small mound lying at the center of the stairway, and then a plaza, with a mound facing away from it on the northern side, VII. On the southern and eastern sides are other mounds, VIII and IX. All three are without buildings on their tops. Back of Mound IX is a small sunken court (fig. 176).

This completes the description of the Chuctiepá ruins. They are not extensive, and show no features of major importance. They are of interest as they form a link between the western Maya cities and the well-known ruins at Toniná. Through the presence of Maya

hieroglyphs, a vaulted chamber, and the form of construction of the pyramids, there is no doubt but that these ruins are Maya. The small stela of a human being is carved in full round, and shows more influence from the Toniná section than from the much nearer Palenque.

It took all the afternoon to make the rough map of the ruins, and by dark we retired to the ranch where, now that we had established confidence, we were well received and offered beds. Before there could be any thought of sleep, we first had to de-louse ourselves of a couple of millions of ticks and redbugs with which we had been infested during the day's work. Ticks are the most ferocious and bloodthirsty animals one meets on the trails of Chiapas.

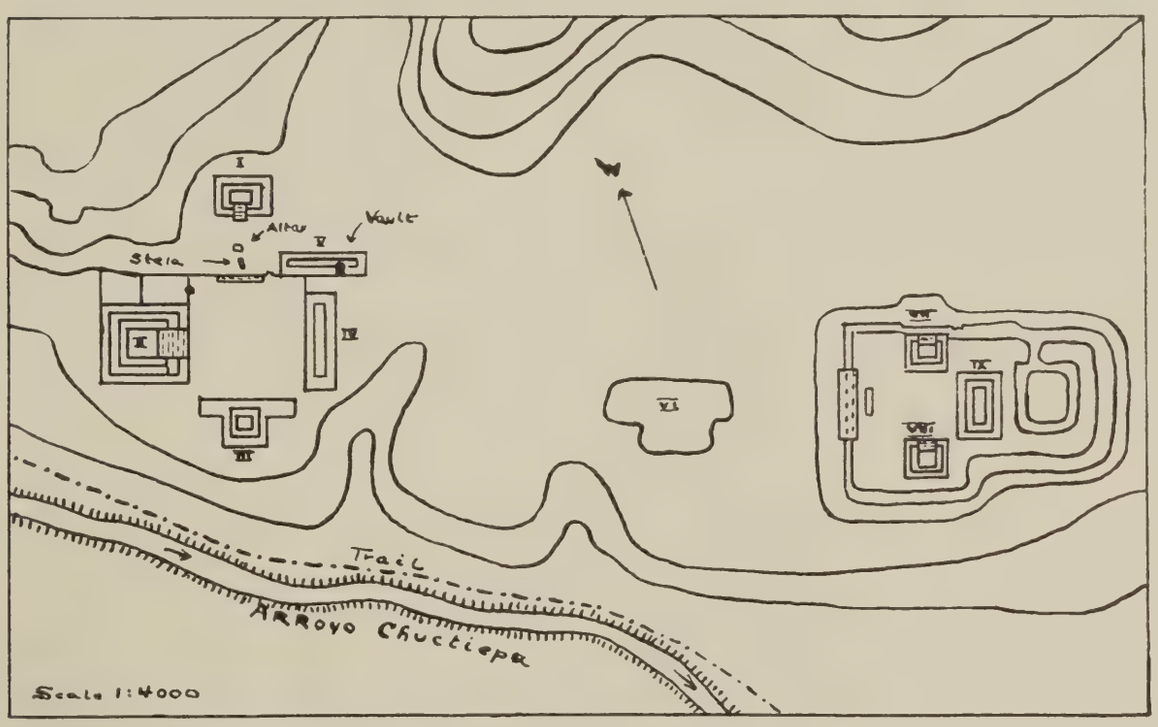


FIG. 176—Chuctiepa, Chis. Map of Ruins.

The following morning we drew the hieroglyphs on the altar, and then returned to Viena. Reaching that place, we at last got an explanation of the previous day's mystery, and this explanation was a joke on us. The fleeing man had really been fleeing from us. The municipal president of San Pedro Savana did not like the looks of the caretaker at Viena, and had promised to hang or shoot him at the first opportunity. Our formidable army of two white men, three Indians with cargo, and the sight of our .22 calibre rifle had frightened him up the trail, very fortunate for us, as he was armed with a .38 calibre revolver and a heavy Mauser rifle. If he had opened fire on us instead of running, I am afraid that we would not have been able to report the discovery of the ruins at Chuctiepá.

Now he sat before us looking out over the meadow for the people who were after his life, while he chatted with us and served us a meal and a drink of rum.

We then embarked in our big dugout canoe and proceeded upstream on our return trip to Finca Encanto. Progress against the current was slow and the sun was blazing hot. The Indians were pushing us forward with long poles; starting at the bow of the canoe placing one end of the pole at the bottom of the river, the other to their shoulders, they plod towards the stern; reaching it they swing the poles over their head and walk forward balancing them to allow those that are still poling towards the stern to pass by. They made a kind of endless human chain and the monotonous clatter of their bare feet on the bottom of the canoe made us drowsy.

It was late in the afternoon when we reached the mouth of the Encanto river, and we decided to proceed to Agua Clara and return from there to Encanto on foot instead of sleeping on a bank of the river. Where the two rivers meet is a group of mounds in advanced state of ruin, which we named the Agua Clara mounds.

Agua Clara is a ranch now partly abandoned. A Mexican caretaker and a few Indians live there. From it a good trail runs along the side of the valley to Encanto. The sun was getting low as we started, but by fast walking we succeeded in reaching the Finca Encanto just after dark.

Sunday is always a day of celebration on the fincas. Both the Mexicans and the natives spend the day getting drunk. We were sitting on the porch of the main house enjoying the beautiful surroundings and fixing up our notebooks when Don Arturo Tovilla, in charge of the coffee plantation Cacate-el belonging to Encanto, came running towards the house and told us that one of the carpenters of the finca had drowned. The two carpenters belonging to the place had spent the morning in getting themselves thoroughly drunk whereafter they went for a trip on the river in a dugout canoe. When they tired of this, one decided to take a bath and carefully placed his hat on the river bank and went in with clothes and shoes on. The swift current and the rum got him. When we arrived his corpse was being dragged ashore. He was blue in the face with froth out of mouth and nose. We worked with him giving him artificial respiration for two hours without result. Then he was laid on a board and carried up to the carpenter's shop to be laid out in state, as is customary here, and candles appropriately set in empty bottles were placed around him. While all this was going on his partner was sitting on a rock by the river, moaning and crying hysterically.

Our chief guide, old Lázaro, had also taken a part in the morning celebration, but, being of a more balanced temperament, he selected the middle of the main road to the finca as the best place he could find to sleep. After a while he got up and went to his room, and when he returned to life towards evening and heard about the afternoon's accident, he at once reported for duty in the crowd of mourners who stayed up all night with the body, singing songs and lamenting the death of one carpenter while the other carpenter beat time on the nails of the new coffin he was making. The drowning of the carpenter stopped us from going into the forest the next day as a statement had to be written and we were expected to report to some kind of local official who was coming from a distant village. We, therefore, spent the day in collecting data on the life of the Indians, making studies of their houses, and collecting words of their language.

La Farge was attending to the linguistic work, and the writer was going to join him when three of the Indians who had worked for us on the river trip to Chuctiepá came towards the store carrying the fourth. The latter had been bitten by a poisonous snake, and though Sebastian Gomez, the foreman, was considered to be the leading medicine man of the settlement he had done nothing but lay a ligature of vines above the bite, which was in the boy's leg. The poor Indian was blue in the face and spitting lumps of blood. His right leg was dark blue and swollen to double its natural thickness. Sebastian would not cure him as he had nothing with which to pay for the services and could not buy the rum, without which no medicine man dares to deal with holy things. Therefore, they had brought him up to the finca and he did not come under our treatment until three hours after he had been bitten.

We at once got out our medicine kit and cut the bite just over the two small red holes made by the fangs of the snake. Then permanganate crystals were smeared into the cut and more cuts were made lengthwise down his leg that he might bleed freely.

After a while his sister arrived and had him carried off to her hut where she would try to persuade a local medicine man to pray over him. We later heard that the Indian snake doctors had refused to help him because we had touched him. Fortunately for us he pulled through and a week later when we left Finca Encanto, he was walking briskly around.

Indian lumber scouts had reported ruins to the east of the finca, on the upper Tulijá, and we therefore set out to investigate. Following a newly opened trail along the right bank of the river we travelled for nearly a day in an eastern and southeastern direction.

Fig. 177—The Big Forest.

All the way we passed through high forest (fig. 177). Until noon we rode over flat ground, but struck very bad going when we commenced to climb over a ridge. The limestone rock was hard with many sharp edges, which made it poor going for our animals. For a while we rode through a narrow box-cañon, and then came to the top of the ridge.

Waiting there for our pack train to catch up, we noted a party of spider monkeys in the trees. They were much excited about our

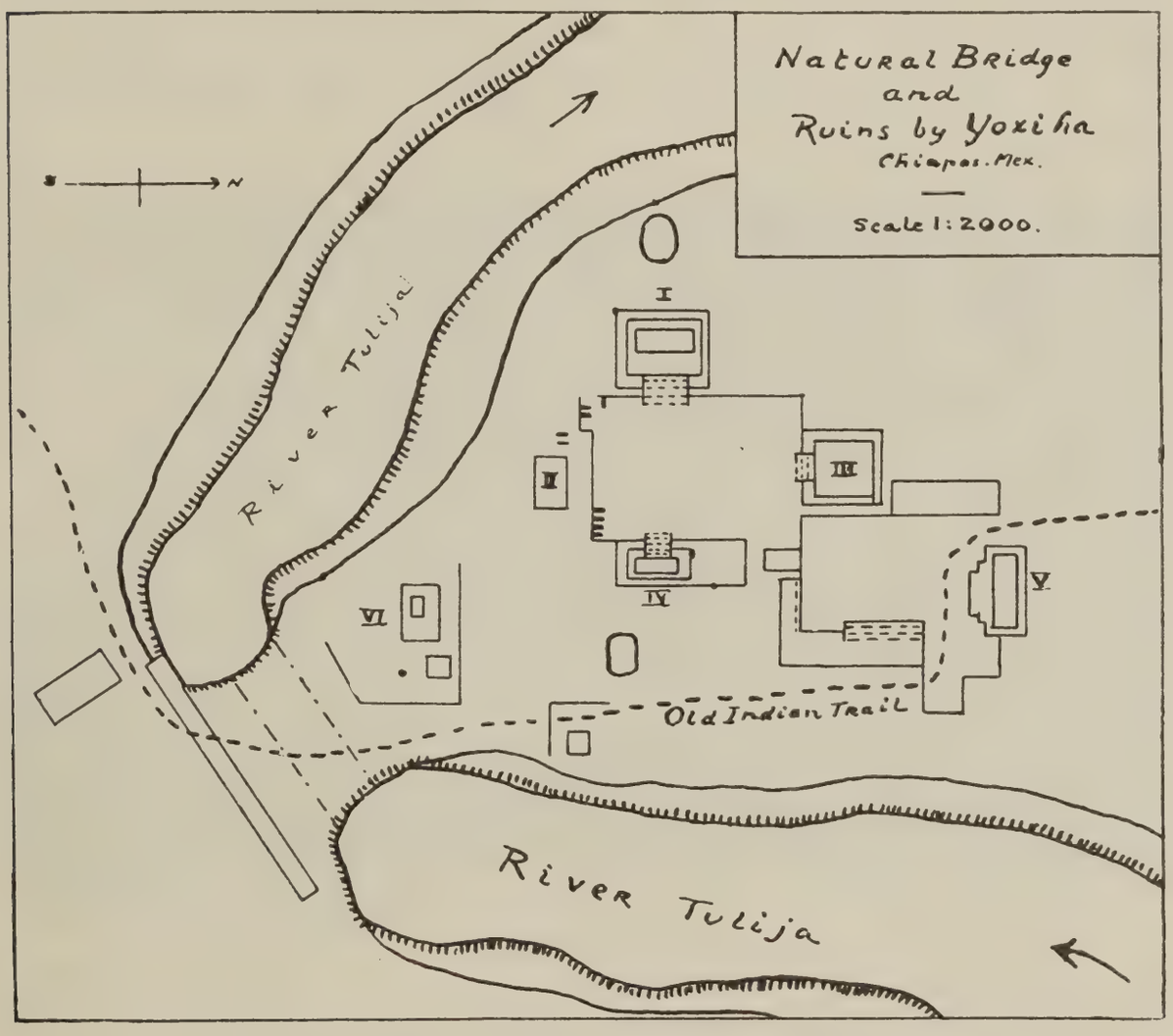


Fig. 178—Yoxiha, Chis. Plan of natural bridge and ruins.

presence, and hung in the branches right over us jabbering and squeaking. One old monkey walked out along a long limb, took the end of it in his hand, and backed towards the trunk of the tree. Suddenly he let go with his feet, the bent branch stretched and catapulted Mr. Monkey through the air over into another tree. We had never noted this trick before, and were much amused at seeing several other monkeys do the same thing.

From this place we descended the ridge by a zig-zag trail. At the bottom we followed a vertical limestone wall, one hundred and more feet high. We were nearing the river, which at this point runs through a deep cañon. Following along the edge of this cañon we soon saw signs of ancient construction, and before long were at the ruins of Yoxihá, and found a palm hut built by some men whom Mr. Timler had sent ahead to prepare camp for us.

Yoxihá is a remarkable place. The Tulijá river is blocked here by a natural bridge, or rather, a wall of limestone that runs across the river, which disappears beneath it to reappear out of a cave a few hundred meters further to the west. On the right bank of the river at this natural bridge the ancient Maya built a group of small pyramids around plazas.

Fig. 179—Yoxiha, Chis. The Tulane Expedition Camp.

Above the bridge are some caves, and the river banks are nearly vertical limestone walls covered with the most luxuriant vegetation. At the foot of the bridge is a deep whirlpool, where the emerald green waters of the river disappear underground, spinning tree trunks and branches around in a mad chase. On the lower side of the bridge is less current and there the cliff overhangs a large deep-green pool in which small fishes flash to and fro. No wonder the Maya selected this spot for their temples (fig. 178).

An old Indian trail crosses the bridge and winds in between the ruins.

We made a plan of these ruins and then explored for more on the left side of the river. Black clouds were gathering, and before dark a heavy storm broke, so we huddled together under a leaking palm roof and pretended to have a good time (fig. 179).

During our reconnaissance we found ten stelae, all long, oddly shaped slabs of limestone without carvings. Only one of these was still standing, all the others were flat on the ground. Some of these slabs were quite large, the largest being 4 meters long, 55 c.m. broad, and 14 c.m. thick (fig.180).

On the top of the main mound La Farge discovered a hole in the ground—a thing an archaeologist cannot find without having to see what is inside. So we lifted some stones and came upon two chambers, one beneath the other. The upper chamber was small and partly filled with dirt. A candle on a long stick was let down into the lower chamber to test the air and also to "see what we could see." We found a pleasant surprise. There on the floor of the chamber, partly covered in dust accumulated through centuries, stood a row of beautiful pieces of pottery. The approaching rain and nightfall prohibited further investigation, and as we wished to have Mr. Timler present when we entered the chamber, we decided to send a messenger to him. In the meantime, awaiting his arrival, we decided the next day to go further into the forest to investigate more ruins.

Fig. 180—Yoxiha, Chis. Stela.

Half a day's ride brought us to a second group of mounds and walls called Muxculhá by the Indians. These were built against the side of a hill in an irregular and somewhat unusual way. Apparently there were no features of special importance here so we limited ourselves to making a ground plan (fig. 181.)

This group is also associated with a natural bridge, though it does not lie as close to the bridge as at Yoxihá. The natural bridge at Muxculhá is likewise a wall across the river, under which it disappears. The wall is quite narrow, and much higher than the Yoxihá wall. Standing on top of it and looking upstream one can see the river disappearing in a whirlpool over a hundred meters

below. Huge tree trunks lie scattered around at the bottom of the river cañon.

With some difficulty we succeeded in reaching the river below the bridge, and here came upon a scene of rare beauty: a narrow gorge, the walls of which were covered with trees nearly meeting and forming a tunnel of green. At the end of the gorge the river emerges from a large cave, first forming a small lake, and then thrusting itself against a large rock, where it burst into white foam (fig. 182).

Again rain clouds piled up, and we reached camp just in time to take shelter under a small palm roof which our Indians had built while we investigated the ruins and the gorge. It did not take them long to build the house, nor did it take the rain long to run through

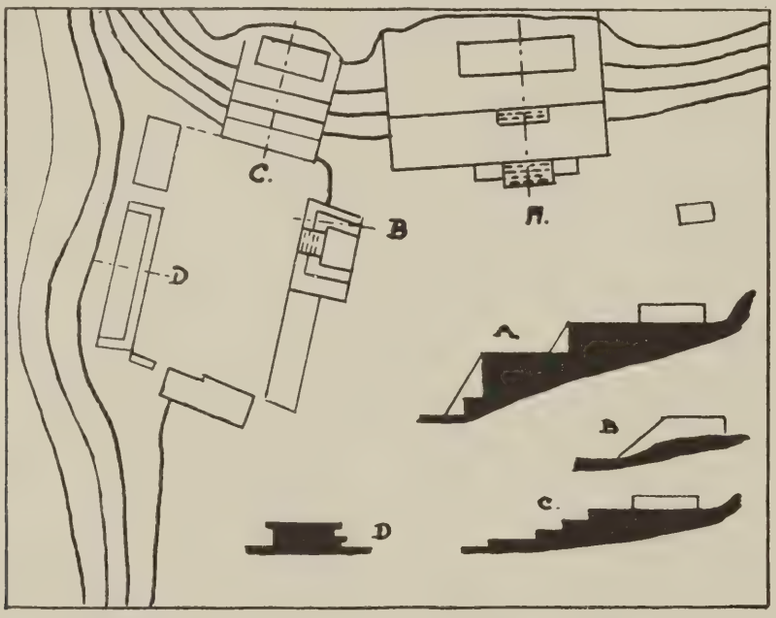


Fig. 181—Muxculha, Chis. Ground plan of ruins.

the roof. We soon stopped the leaks with palm leaves and our rubber ponchos.

After dark as we sat close together with our interpreter, guides, and Indians, a crackling noise was heard outside. Somebody suggested that it was our animals eating leaves; one man said that it might be some small animals jumping among the branches over our heads. But one boy insisted that it was a tree breaking, so he took a lantern and went out into the rain to see. No sooner was he outside before he gave a cry of alarm, and out we all rushed. In the flicker of the lantern we saw a huge tree slowly bending towards our hut. It was pitch dark, and the rain was pouring down. The Indians disappeared into the black forest. Which way would the tree fall—how far would it reach—would it take other trees along in

its fall? Where were our animals tied—would they escape—would the Indians escape — would we escape? Such thoughts rushed through our minds in the few seconds it lasted. A crack, another crack, one more, a hurricane broke loose, a volley of cracks, and a booming thud as the forest giant snapped and came down taking several smaller trees along in its fall.

A few minutes went by, then one Indian after another appeared in the small circle of light made by our lantern. We went to the hut. It had not been touched. The trunk of the huge tree lay parallel, within three meters of it. Even the coffee pot, which hung on a tripod in front of the hut was untouched, and the coffee was boiling merrily on.

Fig. 182—The Tulija River emerges from a cave.

It was a narrow escape. After the excitement, chattering went on among the Indians for a while, then quiet fell over the camp and we all went to sleep.

Morning brought sunshine, and for the first time we fully realized how near we had been to a sudden end. We discovered that the reason for the tree falling was that during the dry season the rotten interior of the huge trunk had dried out thoroughly and when the rains started the limbs became weighted down by water. When it could stand no more weight it had come down.

A few hours' ride brought us to our goal, a small lagoon called Jolhá, the headwater (fig. 183). Here we found a large camp built some months before by Mr. Timler's men, and as there were no ruins in the vicinity we took the afternoon off, loafing around in the forest and taking shots at large alligators floating lazily on the water of the lake.

Around Jolhá mahogany is plentiful (fig. 184). It has not been cut for it is impossible to float the trees down the river because of the two natural bridges we had just passed. In case these

regions should be opened to exploitation, the bridges would have to be blasted away. When this happens two spots of great beauty and charm will disappear.

Another tree found to be abundant was the Cacao. Here it grows wild, or we may have the remnants of an old Maya plantation. We know that the Mexican Indians held the Cacao tree in high esteem. The beans were used as small change in the trade of those days, and the drink cacao, or chocolate, was common far up into northern Mexico where the tree did not grow. At the time of the Spanish Conquest we hear of Aztec rulers sending whole expeditions under armed protection down to Soconusco on the Pacific coast in search of the treasured bean. Wars were fought over cacao in pre-Conquest days, and the Spanish padres remonstrated with the Spanish soldiers for taking so eagerly to this, the favourite drink of the idolaters.*

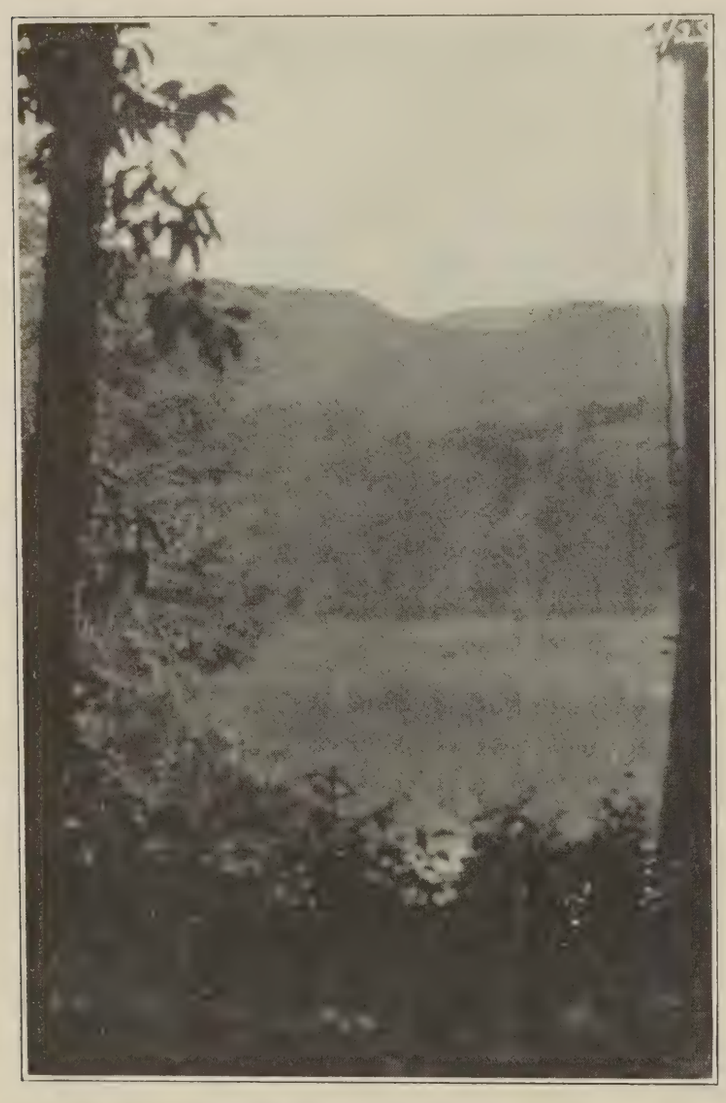


Fig. 183—The Jolha Lagoon.

Our interpreter, Ciriaco Aguilar, a most excellent man given to us by Mr. Timler, told us that in certain parts of the Ocosingo valley the Indians to this day use the cacao bean as small change in their negotiations with each other.

Back at Yoxihá, we found our messenger returning with a note from Mr. Timler, telling us that he could not join us. We therefore at once commenced to work on the two burial chambers in the main mound, No. I on the map.

Inside the mound are two chambers, one below the other (fig. 185). We had already had a glimpse of the pottery standing in the

*Leon Pinelo, 1636.

lower chamber through a hole in the top of the mound. Several large stones were removed and this gave us access to the upper chamber, which was partly filled with dirt. We found a badly decayed skeleton and some beautiful pots. Several of these pots were broken, but we carefully collected the sherds, and upon our return to Encanto succeeded in assembling them.

This upper chamber is a burial vault, not very large, and it appears that the upper part of the mound was added to give room for it. The remarkable feature about this pottery is that every piece but one in the upper chamber stands on three small legs. Furthermore, all the pieces are polished. Some of them have incised drawings, but none are painted. The pots and bowls were numbered in the order in which they were found.

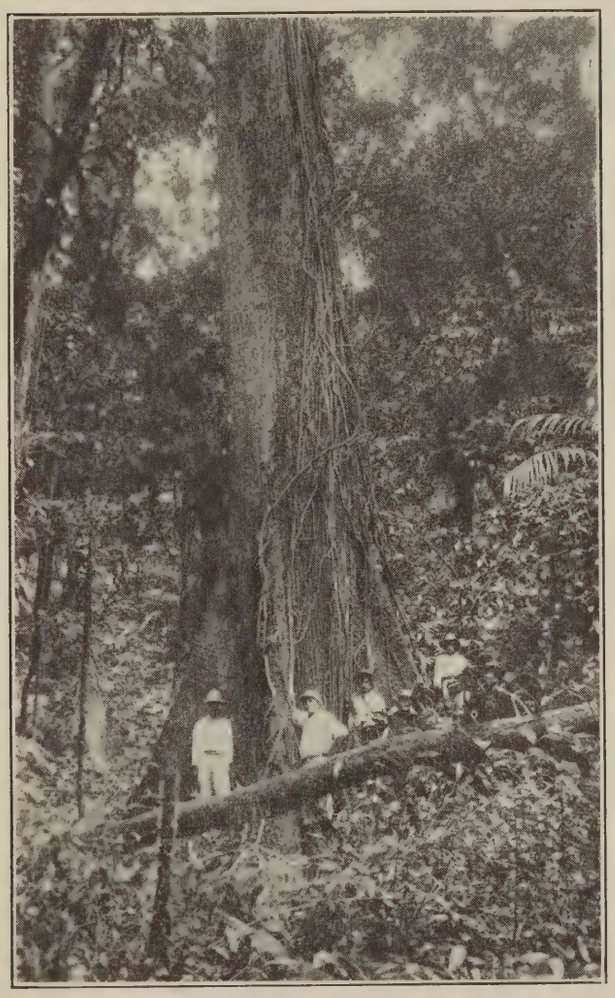


Fig. 184—A Mahogany Tree.

U-1, U-5, and U-8 are exactly alike. They appear to be dishes and stand on three hollow legs, inside which are pebbles that rattle when the bowl is moved. They are made of cream-coloured clay tempered with fine sand. On the surfaces they have a fine black polish, with spots on each where the polish has been worn off, in two cases going right through the side of the vessel. At first this looked like ceremonial killing, but on closer examination it was seen that these holes were produced by rubbing or scraping (fig. 186).

U-3 is of the same type as the dishes mentioned above. It was badly smashed, and could not be assembled.

U-4 is a small bowl on three feet. On one side is a conventionalized face, very crudely made with applique clay pellets and incised lines. The face resembles somewhat the incense vessels made

at present by the Lacandon Indians. The paste is gray and nicely polished (fig. 187).

U-6 is a large brown vase of very finely textured clay, with thin walls. There is no decoration on this vessel, and its bottom is quite

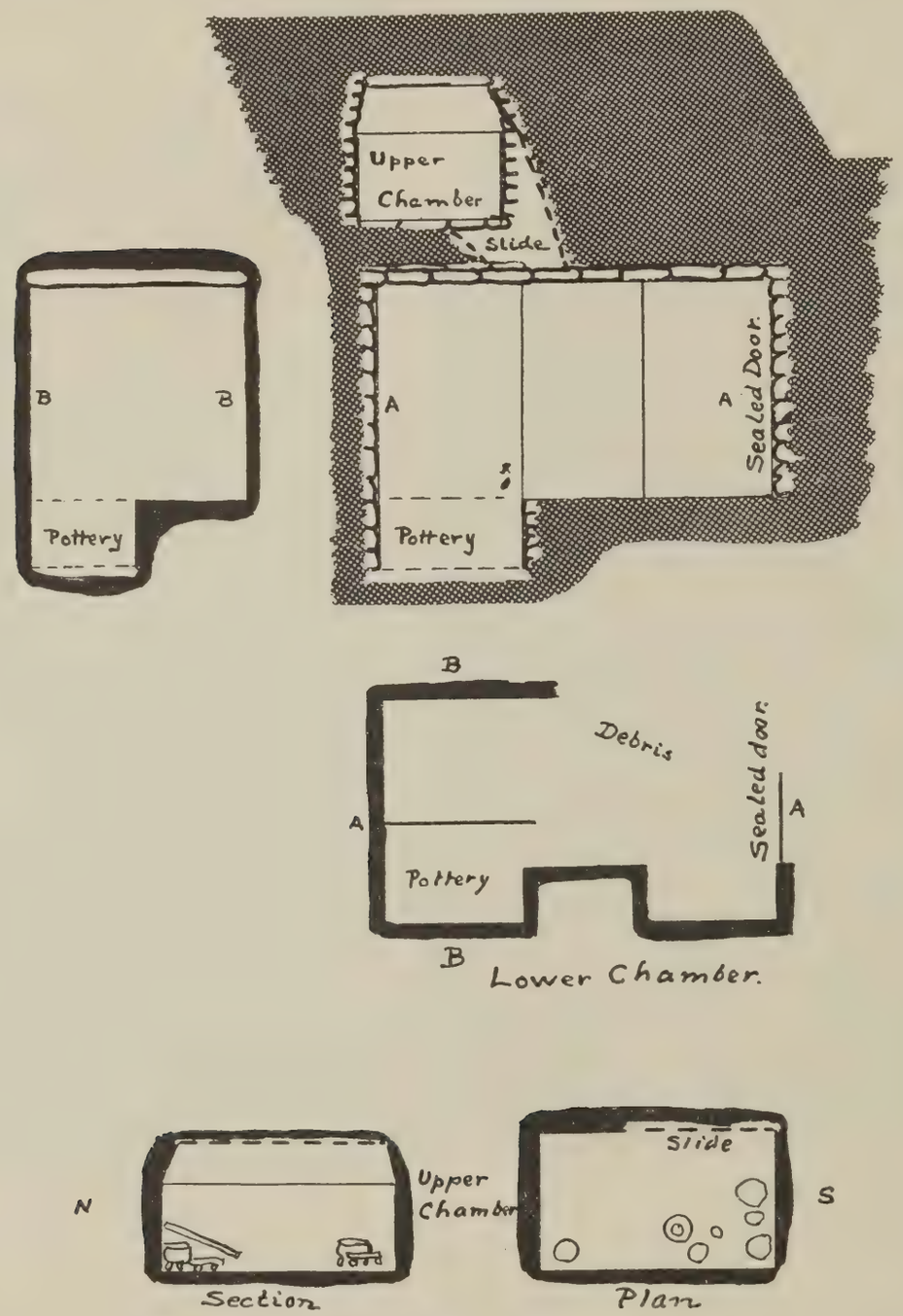


Fig. 185—Yoxiha, Chis. Plan and section of two burial chambers in Mound 1.

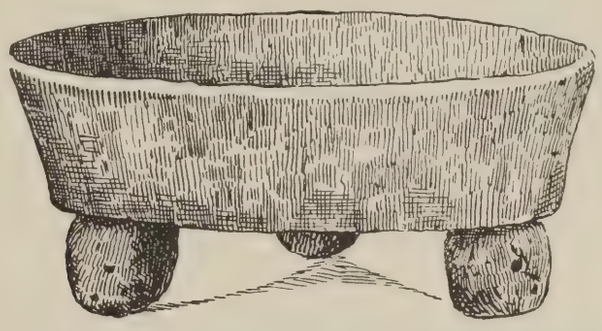
flat. This is the only vessel in the upper chamber that has no feet (fig. 188).

U-7 is similar in form to U-6, though it stands on three low solid feet. On its surface are incised three sitting figures in profile.

JAR U-6, YOXIHA, CHIAPAS

These figures have long feathers hanging from their head-dresses. (Plate III). A peculiar technique has been employed. It appears that the background between the figures was covered with some substance when the vessel was fired, thereby colouring the figures a dark brown and after removing said substance, leaving the background a lighter shade of brown.

U-9 and U-10 are both of gray clay, and alike in form though not of the same size. Both have incised drawings on the surface showing an animal resembling a monkey. The tail of the animal



FIGS. 186 and 187—Yoxiha, Chis. Tripod Bowl, U-4 and U-5.

FIG. 186-187.

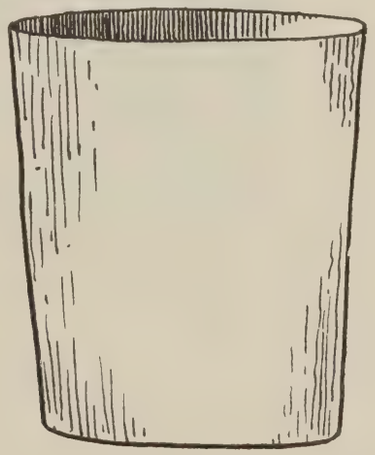


FIG. 188—Yoxiha, Chis. Jar U-6.

is too thick to be that of a monkey, and its eyes are very large, so it may represent the small nocturnal lemur, Mico de Noche (fig. 189).

U-2 was a badly damaged bowl of which only fragments were found.

The skeleton was placed with its head towards the north (Palenque style), and by it we found a few teeth, of which one incisor had been filed into a point and inlaid with a black stone. Such teeth with inlay have been found in various parts of the Maya area, and the custom of beautifying one's self through tooth filing or inlaying teeth is known all through Central America, and also in parts of

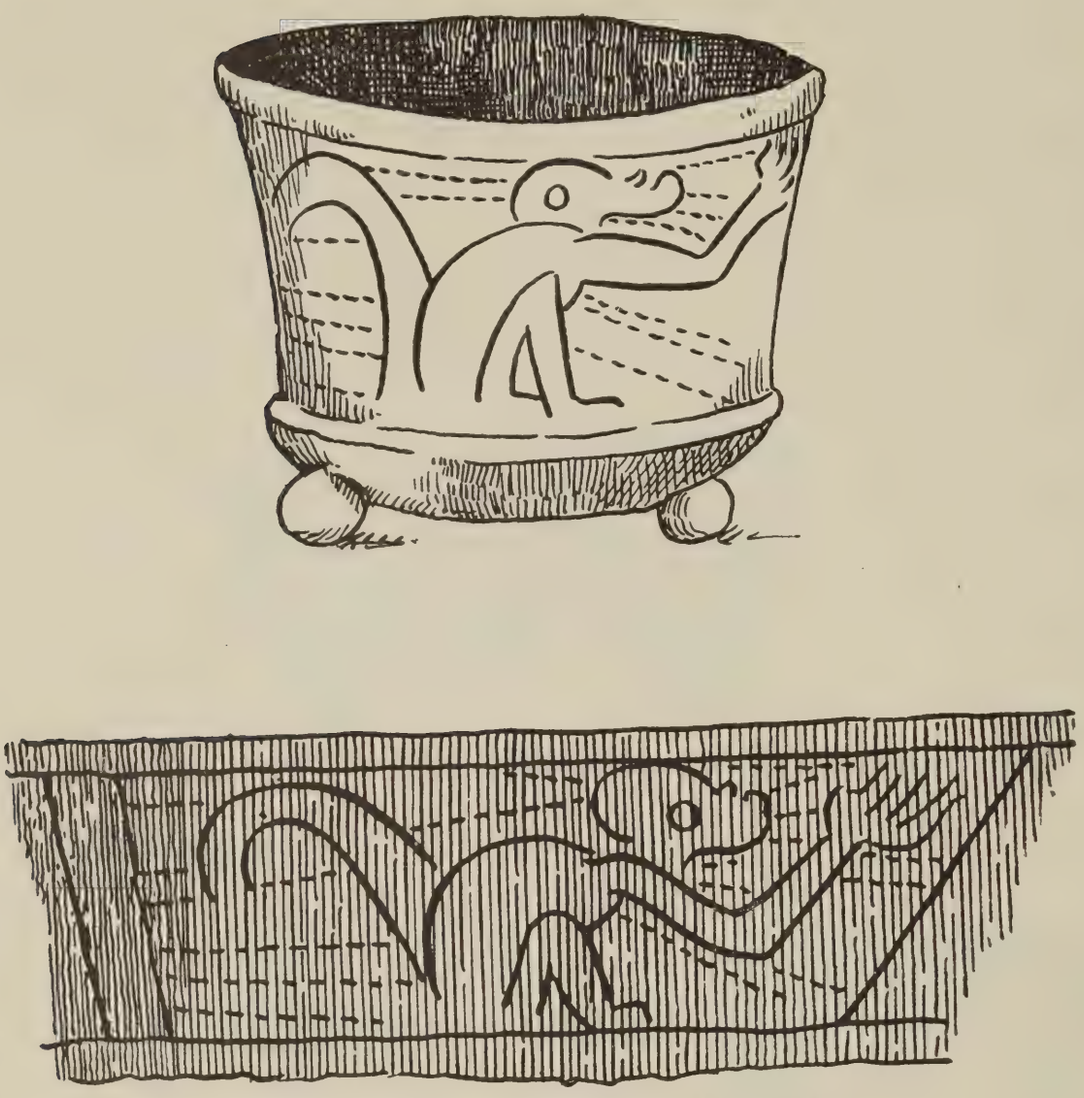
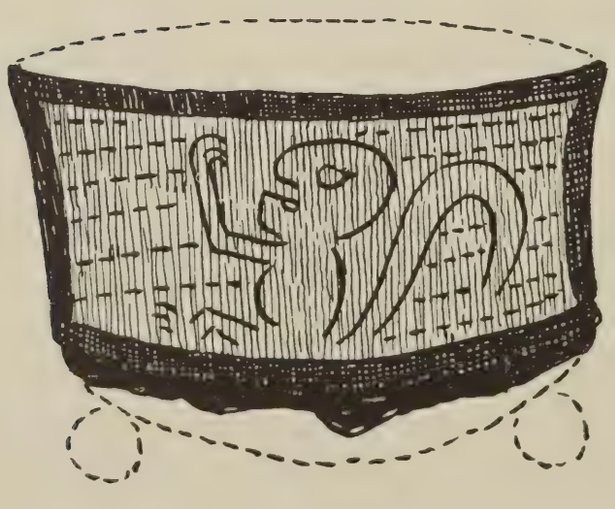


Fig. 189—Yoxiha, Chis. Tripod Bowls. U-9 and U-10.



South America.* To have one's teeth filed was undoubtedly considered a mark of high standing and beauty, but, considering the various other methods of personal enhancement used by the Maya, the tooth decoration may be one of minor importance (fig. 190).

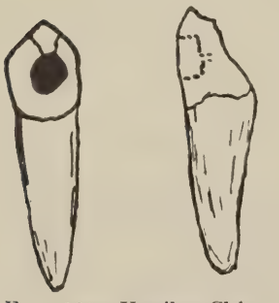


FIG. 190—Yoxiha, Chis. Filed incisor tooth with inlay of pyrite. Full Size.

An Old Empire noble was prepared from his earliest infancy to become a beauty. First, his skull was artificially deformed by laying the infant's head between boards in order to flatten the forehead and make it slant backwards. As it was a mark of beauty to be cross-eyed, the proud Maya mother placed pebbles of wax on the bridge of the nose of her child, that he might acquire the habit while young. Add to this the filed and inlaid teeth and a coating of red paint all over the body, large jade ear and nose plugs, a cotton cloak, a huge helmet inlaid with jade and adorned with feathers of the green quetzal bird, and one will have a picture of a Maya Beau Brummel.

It is possible that the man laid to rest in the upper chamber was one of these. Undoubtedly he was a person of high rank, otherwise he would not have been buried in the top of the principal mound in the city, together with a large collection of precious clay vessels for his food on his journey to another world.

Rain water had washed out the eastern side of the upper chamber, and made a small opening down to the lower chamber. This is really an antechamber and a passage. The antechamber lies towards the west, and against the wall stood a large collection of beautiful, painted pots. Nearly all stood on the surface, only partly covered with a layer of dust accumulated through centuries. Some of the smaller bowls were inside the larger ones and nearly all were intact and had their colours preserved amazingly well (fig. 191).

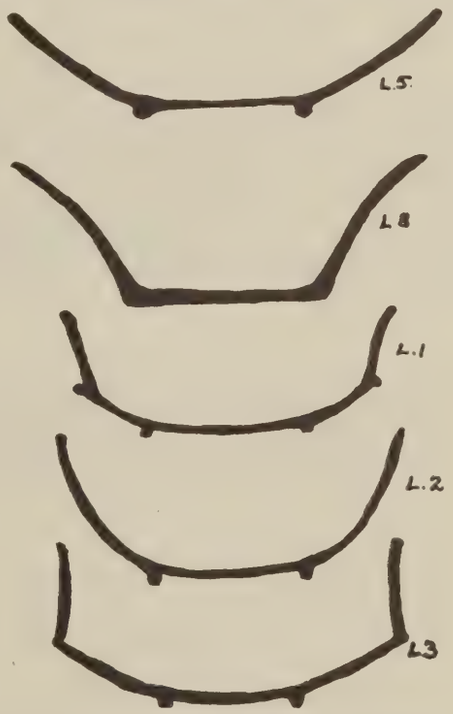


FIG. 191—Yoxiha, Chis. Sections of pottery.

Pottery in Lower Chamber:

L-1. A dish or flat bowl with a design in color representing a conventionalized snake's head on either side. The slip is orange red,

*Saville, M. H., 1913.

on which the design is painted with black outline and the use of gray and dark red (Plate IV. a.)

L-2. A bowl of red clay tempered with sand. On the outside it is painted with a cream colour, inside it has a strong orange yellow colour highly polished, and along the inside rim runs a line of deep red.

L-3. A dish or flat bowl of a form similar to L-1. The vessel has an orange yellow slip on which two conventionalized currassaws or Faisan Real are painted in red, brownish black, and gray. The outlines of these designs are drawn in black. Along the inside of the rim is a design in dark red (Plate IV. b).

L-4. A bowl with straight sides and a warm orange slip, on which is painted a design in black. The main motifs for this design have been taken from basket making, and the design continues over the bottom of the vessel. The whole vessel has a fine polish, both on exterior and interior (Plate V.)

L-5 is a bowl with plain cream coloured exterior, painted orange and having a high polish.

L-6 and L-8 are alike in form, having a flat bottom with everted lip. They are painted and polished orange red on the exterior, and plain inside.

L-7 is a small plain bowl, with faint signs of drawings on the exterior. It is black and has polish.

L-9 is identical with L-5 both in form and colouring. It was found badly broken, and some pieces were missing, so it was not repaired.

L-10. This is a finely shaped small bowl. Inside it has a deep red colour, and outside a fine black polish. On one side is an ornament carved in low relief, and of very decorative effect (fig. 192).

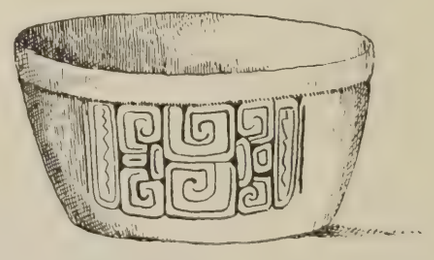


Fig. 192—Yoxiha, Chis. Bowl L-10.

L-11. The next find consisted of two pieces of shell with a mother of pearl lustre. These shells may have been ornaments though they carried no sign of having been carved. Fragments of three bowls were found in the fine dirt below these pieces of pottery. These were of the same type as L-5 and L-9, and too incomplete to be assembled. They were numbered L-12, L-13, and L-14.

In all, 24 pieces or fragments of pieces of pottery were found in this mound. The objects in the upper chamber all stood on three

Inner Rim

No. L 3.

Inner Rim

No. L. 1.

BOWL L-3, AND BOWL L-1, YOXIHA, CHIAPAS

BOWL L-4, YOXIHA, CHIAPAS

small legs, with the exception of one, as above stated. Several of the pieces in the lower chamber stand on circular rims. It is apparent that the upper chamber is of a later date than the lower chamber, so we have here a hint of pottery stratification, i. e., that the form of pottery standing on three legs is of later date than those standing on a circular rim. Furthermore, the majority of the pots found in the lower chamber were decorated with paint, and those in the upper chamber were without paint and had incised designs.

In the lower chamber we also found two small disks the size of a nickel, though thinner. One of these is of slate, the other of sandstone. They look so much like coins that the Indian who found one of them kept it for himself until he had found out that it was not a coin. What these may have been used for is difficult to say.

No signs of a burial were found in the lower chamber. However, there is a sealed door towards the east of this chamber, and there is likely to be a burial room behind this door. Again we were detained from further exploration because of our promise to the Mexican Government, Department of Anthropology, to make no excavations.

The upper chamber is built of small stones set in mortar. The walls of the lower chamber are of large cut stones.

All the pottery was carefully extracted, packed, and transported to Finca Encanto, where it was dried and assembled. Then every piece was photographed and drawn, and the whole collection left in care of Mr. Timler.

The collection of pottery discovered by us again shows us what high artistic standard the Maya reached. Several fine collections of pottery have been found before. The most notable are those found in the eastern part of the department of Petén, Guatemala, now in the Peabody Museum of Harvard University, and the famous vases from Chama, unearthed by Mr. Dieseldorf. However, very little has been published on Maya pottery. Hardly anything is known of the relative age of the different types and styles, nor do we know of the various centres of manufacture. A study of these problems is now being made by Dr. S. K. Lothrop.

The exactness with which these pieces of pottery are formed is astonishing, and leads one to believe that Mercer is right when he insists that the Kabal, or primitive potter's wheel, seen by him in Yucatan in 1895, is an invention by the Maya and not imported from Europe with the Conquest. Whether these pieces were turned on the Kabal or built up in the hand without a wheel, we cannot but admire the skill with which they are formed, and the sure hand with which the designs are drawn. There is nothing primitive in the art

of the Maya potter, and many pieces from his hand rank among the finest pieces of ancient pottery in the world.

Hardly had we returned to the comforts of the Finca Encanto, when our Indian friends told us of another group of ruins not far from the trail to Palenque, so while La Farge investigated the customs of the natives around the finca, the writer set out on foot with a small band of Indians.

The guide, Antonio Kuch, took the trail following the telephone line from Encanto to Salto de Agua. After two hours' walk over very broken ground, we reached the Palenque trail, and continuing westwards reached a small creek named Huxumachital by the In-

Fig. 193—Huxumachital, Chis. A ruined Temple room.

dians. The name is a combination of the local language Tzeltal, and Spanish. The first part of the word Huxu or Hux means "to sharpen," the second part, "machete" is the Spanish for bush knife, and finally, the tal is the locative Spanish ending. In short, "the place where you can sharpen bush knives." This name has undoubtedly been given to the creek, because there are outcrops of a fine-grained sandstone in it, and the Indians find these useful for sharpening their bush knives.

Crossing the creek we climbed a small hill, and soon reached an abandoned Indian ranch house.

From this place was a most magnificent view over the upper Tulijá Valley. Behind us at the foot of the valley lay a mountain

THE TULIHA VALLEY

range in its exhuberant cover of gigantic trees, and on its far side, range after range of mountains. Our road lay over these (Plate VI).

At a short distance from the abandoned ranch house the ruins stood on a small knoll. The group was not very large, as a matter of fact only a few mounds around a court. The largest of these faced approximately west, towards the court, and here were the remains of one room (fig. 193), and the fallen roof of another. These two rooms lay along the west side of the mound and faced the court.

The room exposed by its roof falling outwards showed the typical Maya construction. No designs or stucco ornaments were found on its well-preserved back wall. It may be that more rooms lie hidden under debris of the mound (fig. 194).

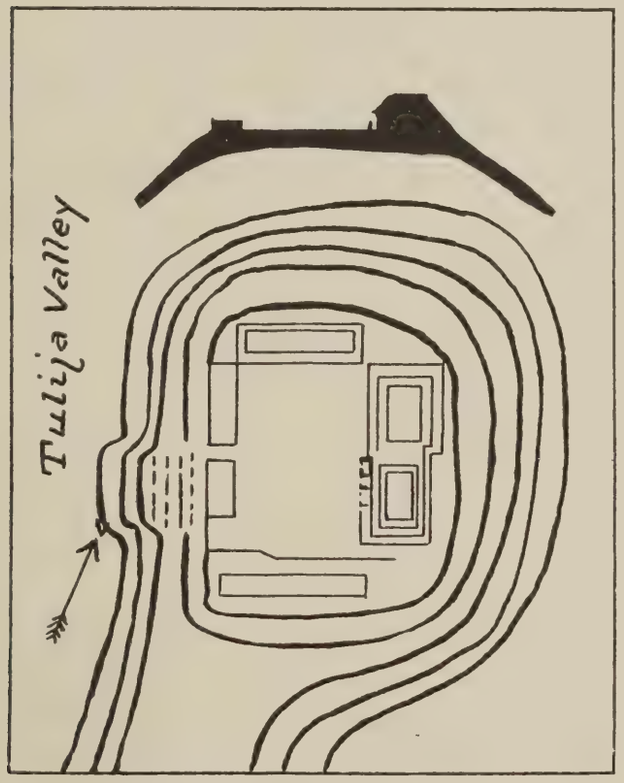


Fig. 194—Huxumachital, Chis. Plan of ruins. (Scale 1:2000).

A search was made for carved monuments, but none was found, so when a ground plan of this small group of ruins had been made we returned to Encanto, arriving late in the afternoon.

We spent several days at Encanto as there was much work to do. La Farge was busy with his studies of the Indian customs and the writer occupied himself with making sketches of the pottery found at Yoxihá. It was work and rest at the same time.

La Farge had collected much data on the Indians, but one thing that he had not seen was an Indian burial ceremony. We could not very well kill an Indian for that purpose, but as it happened the Indians themselves furnished us with the missing data.

While I was making water colour sketches of the Yoxihá pottery, an Indian came running with the news that there was a dead man lying in front of one of the Indian houses. Following him, I saw an Indian lying on the ground, face down. For all I could see, he might be drunk and taking a rest. Turning him over I saw that he had a large hole in the abdomen. He had been shot from a short distance with a shotgun, and was quite dead. Two or three Indian

women sat around wailing and screaming. One of them was quite a pretty girl.

The murderer had escaped, and in bits and fragments I got the following story. Sebastian Moreno, Indian, had a pretty sister with whom he led a married life. None the less, Pasqual Guzman, already married, wanted this girl and was courting her much to the disgust of Sebastian.

For a long time trouble had been brewing. They had both got drunk. Sebastian had drawn his machete, and given Pasqual some bad slashes in the shoulder, whereupon the latter jumped into his hut, grabbed a shotgun, and fired at Sebastian a few feet away. Bleeding badly from his cuts, Pasqual ran for the forest.

A small detachment of the Mexican employees of the finca at once set out in pursuit of the murderer, but soon returned without having found anything but bloodstains on the bushes.

Meanwhile those who stayed behind had locked up Pasqual's wife. Everybody insisted that he would return to get his wife, and that she would follow him to some secure place far back in the forest, where they would build their house and make their fields, living outside the reach of the authorities. I thought this rather doubtful, but towards the afternoon some of the Mexicans came walking in with the murderer securely tied. They had found him stealing towards his house and caught him as he tried to enter.

It was a strange sight. One-half of his body was white, his cotton trousers and shirt; the other half was red from blood streaming out of a deep gash in his shoulder.

Murderer or not, I at once attended him, washing his cuts, and treating them with antiseptics. He had one cut under his chin, and was minus the tip of one finger from gripping the blade of the machete which Sebastian was wielding. Worse was the cut in the shoulder, clear to the bone.

All the time I was treating the wounds, he did not show the slightest sign of pain. He just looked at me. He was afraid he would be hanged, and it was pitiful to watch him being led away, securely bound, to be held till the authorities from San Pedro Savana could come for him.

That night the family of the dead Sebastian held a wake, and the next day at noon he was buried. La Farge attended both of these ceremonies.*

Finally on the 7th of June our work at Encanto was completed, and in the afternoon of that day we rode up to Cacate-el, a small

*Described in Chapter XIV, "The Northern Tzeltal Tribes."

coffee plantation belonging to the Encanto people and managed by Don Arturo Tovilla.

The plantation house lies in a small valley, picturesquely located among groves of palms and bananas. Don Arturo received us with true Mexican courtesy, and with him we spent a charming evening, surrounded by twenty or more Indians who had brought their small home made guitars, and played soft native tunes to us in the light of large gasoline torches.

Don Arturo had already been of great help to us at Encanto. He has lived a long time among the Bachajon Indians, speaks their language, and is well acquainted with their customs. Far into the night we sat listening to his tales, and again we were lucky in picking up a bit of folk lore.

Reluctantly we left our friendly host, who followed us on the way. Mr. Timler had given us the use of several good pack mules which he was sending up to the highlands for provisions, and had also given us the able guide and interpreter, Ciriaco Aguilar, who had been with us all during our stay in the Encanto region. Ahead of us lay mountains, valleys, rivers, and bad trails. The road led right through the country of the Bachajons, feared by most Mexicans in those parts of the world.

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